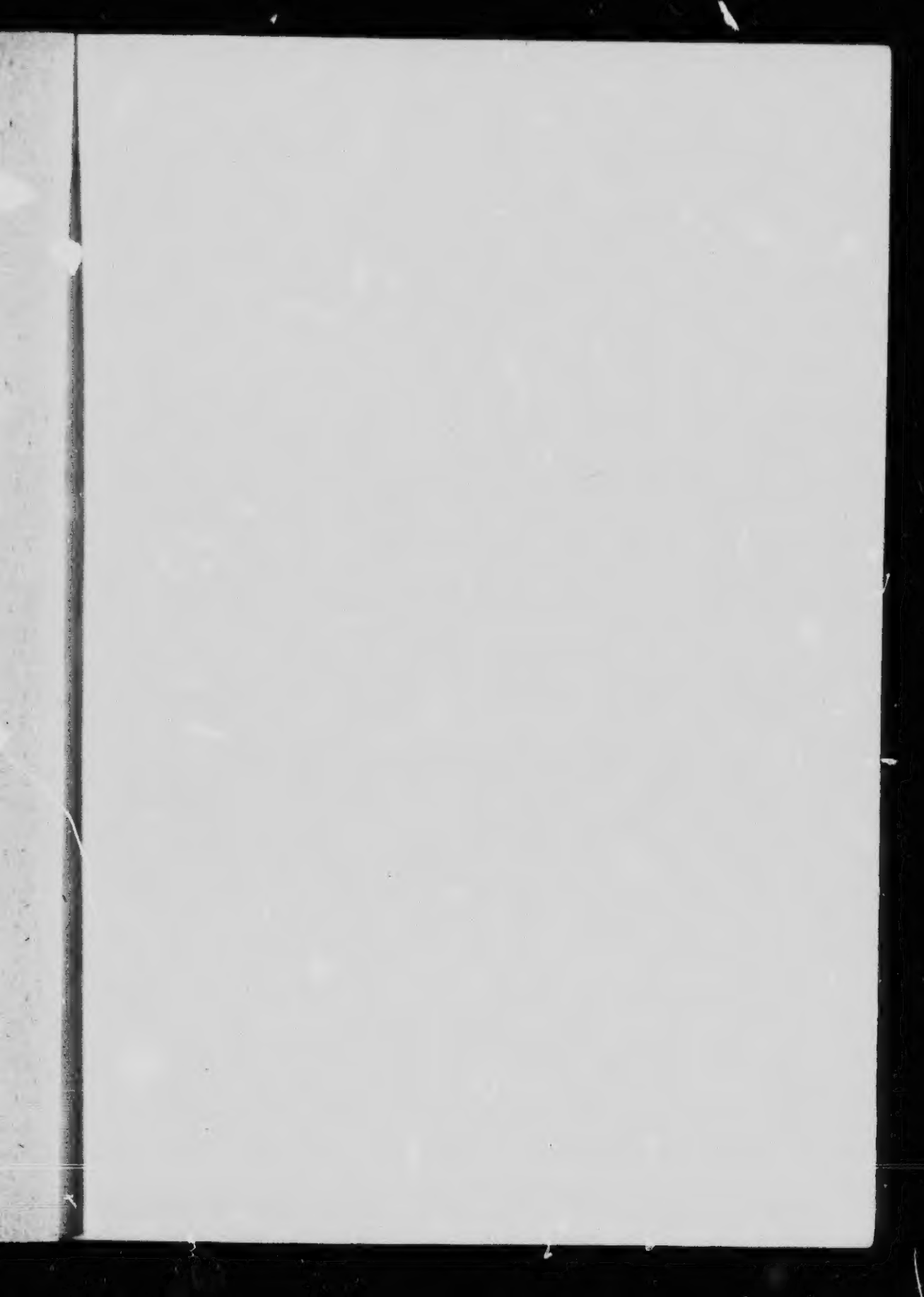


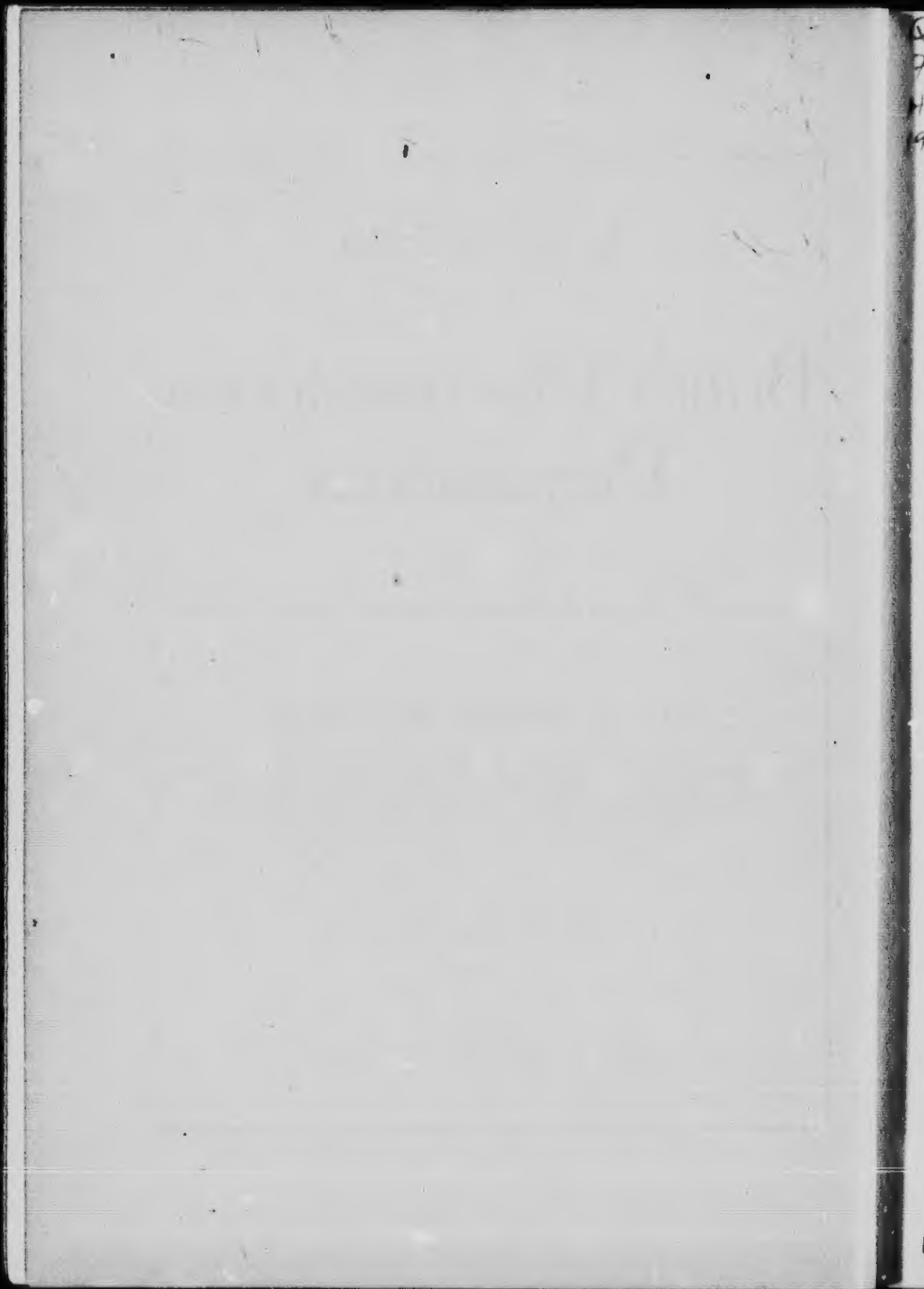
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A SYNOPSIS
OF THE
**British Pharmacopœia
Preparations**

Designed for the use of Pharmaceutical and Medical Students

BY

CHAS. F. HEEBNER, Ph.G., Phm.B.

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College of Pharmacy; Associate Professor of Materia Medica and Elementary
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Manual of Pharmacy and Pharmaceutical Chemistry;
Urinalysis; Notes on Volumetric Analysis, etc.

TENTH EDITION

TORONTO
CHAS. F. HEEBNER, PUBLISHER
1916

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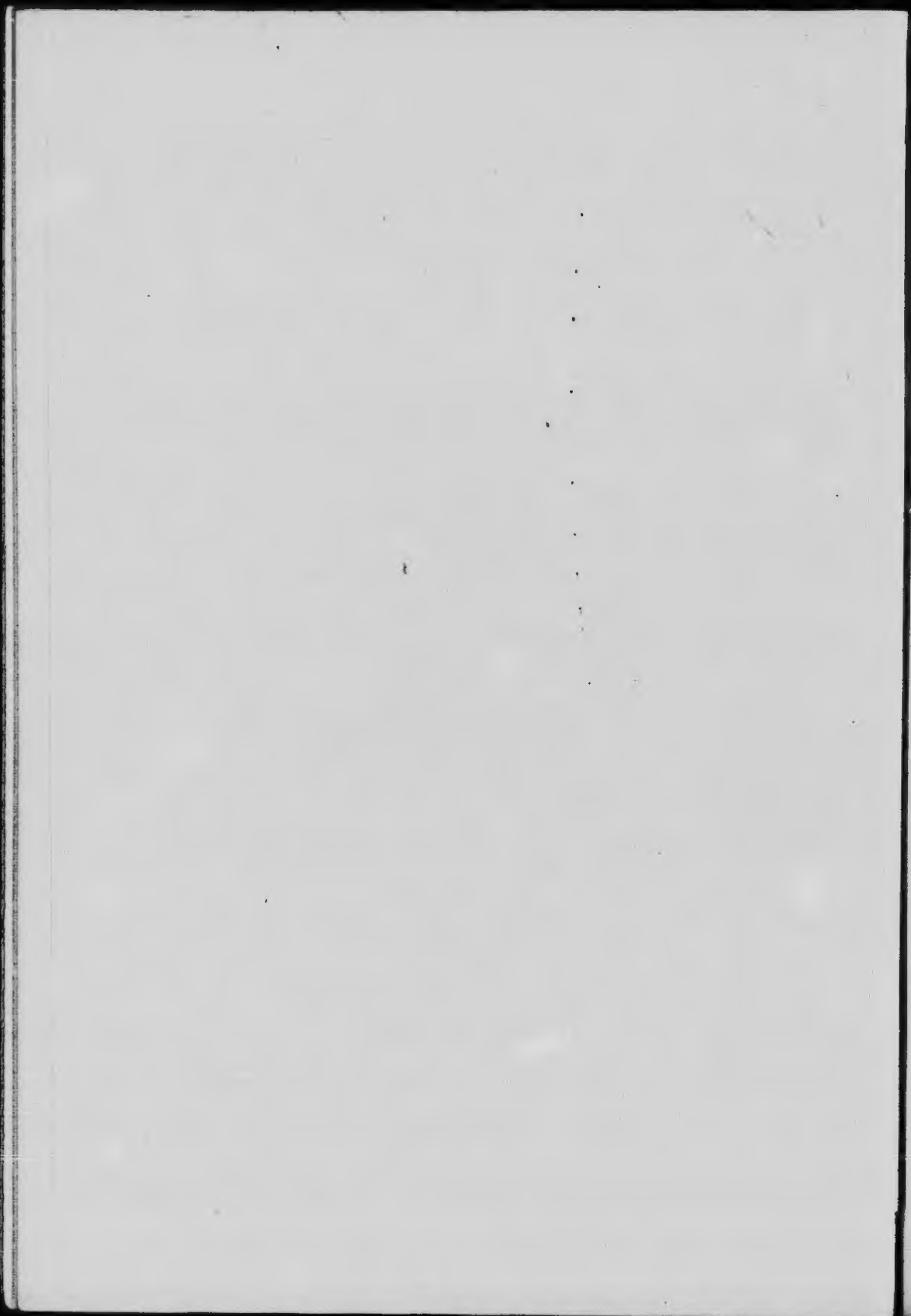
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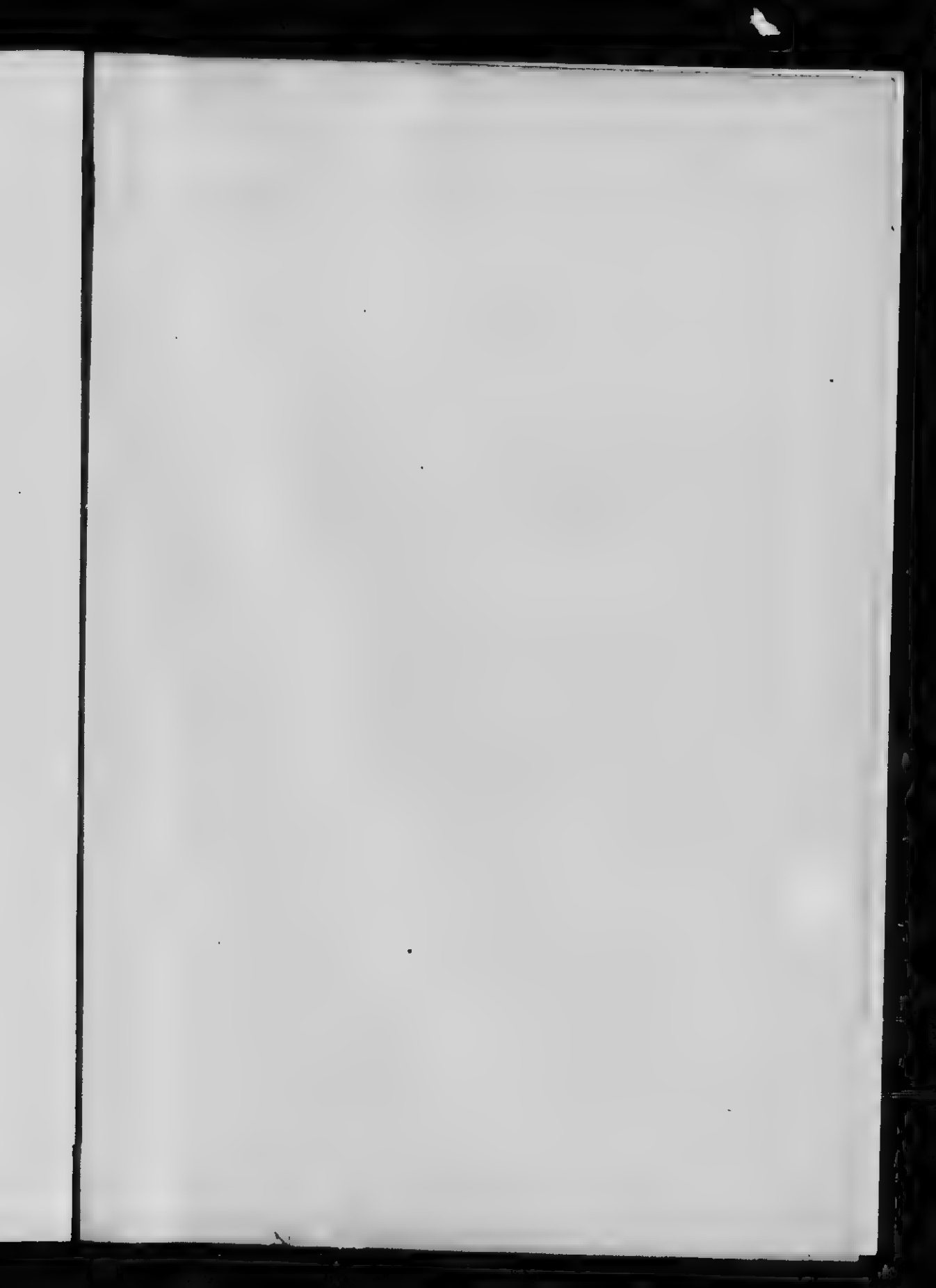
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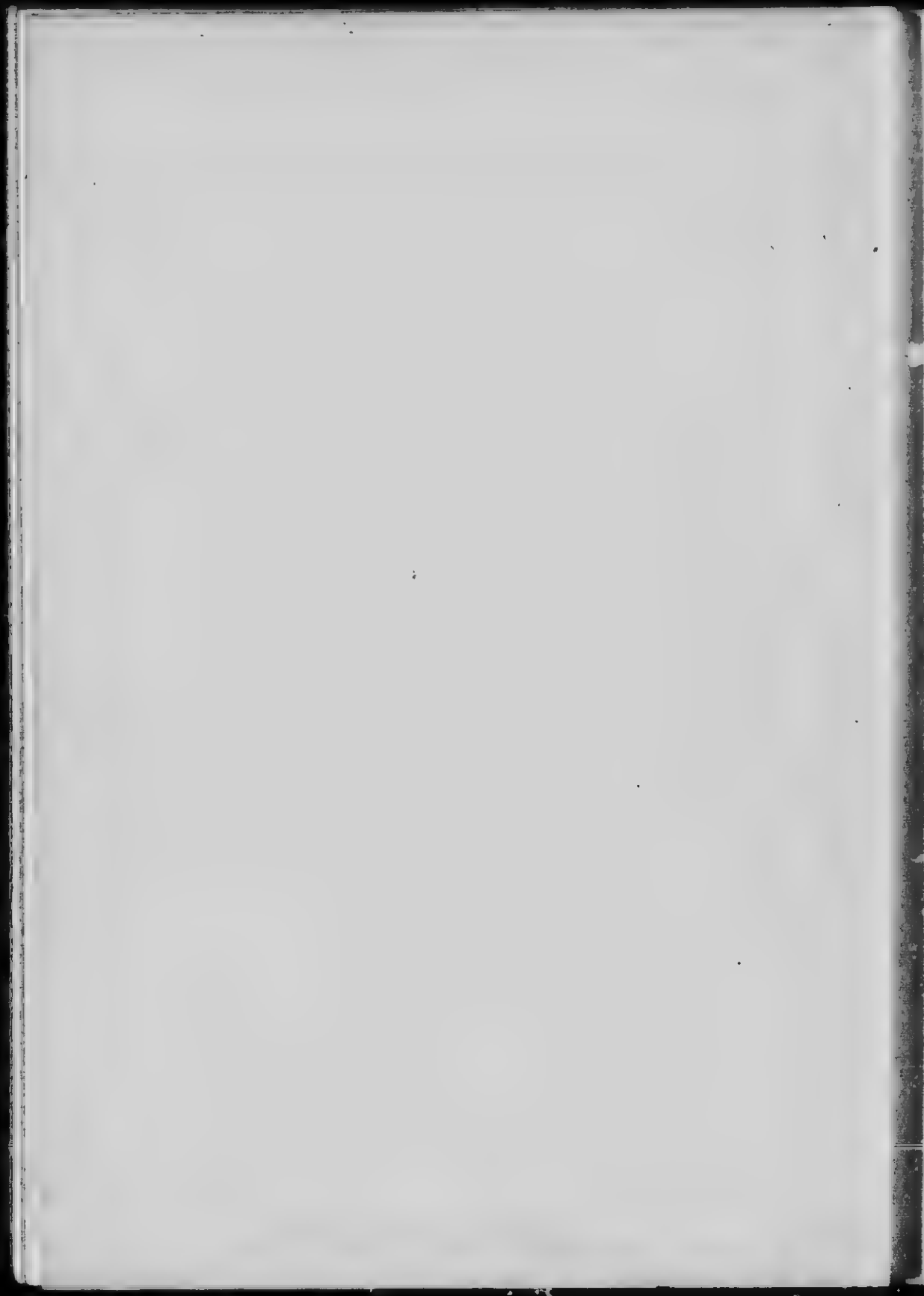
CORRIGENDA

FOR THE TENTH EDITION OF SYNOPSIS OF B. P. PREPARATION.

- Page 10, line 9; read "Fe(OH)₃" for "Fe(OH)₂,"
 Page 11, line 9; for " $\frac{1}{4}$ to 2 fl. dr." read " $\frac{1}{2}$ to 1 fl. dr."
 Page 11, line 30; for "91 per cent." read "87 per cent."
 Page 13, line 13; for "2 to 5 grains" read "5 to 10 grains"
 Page 18, line 3; for "16 mils." read "60 mils."
 Page 27, line 25; for "2%" read "0.2%"
 Page 29, line 23; for "Liquors" read "Liquor"
 Pages 30, 31, 32, line 4; for "Liquors" read "Liquor"
 Page 31, line 25; read "HCOH" for "CH₃COH"
 Page 48, line 22; read "FIVE" for "SEVEN"
 Page 55, line 7; for "hypophosphates" read "hypophosphites"
 Page 55, line 20; for "Twenty-two" read "Twenty-three"
 Page 57, line 13; for "1 Squill in 8" read "1 Squill in 18"
 Page 62, line 3; delete "Cantharidini"
 Page 62, line 4; for "Gebemii" read "Gelseonii";
 for "Semimim" read "Seminum"
 Page 62, line 7; after "Aconiti" add "Cantharidini"
 Page 62, line 8; for "3 tinctures" read "4 tinctures"
 Page 63, line 10; for "30 to 60 mins" read "5 to 15 mins"
 Page 63, line 11; for "(2 to 4 mils)" read "(3 to 10 d.mils)."
 Page 68, line 13; for "5 to 15 minims" read "2 to 5 minims"
 Page 71, line 38; for "16" read "12 to 14"
 Page 72, line 5; for "15 to 17" read "12 to 14"
 Page 75, line 17; "100 gr." for "1000 gr."
 Page 83, line 22; after "sugar" insert "or powdered drug of known
 alkaloidal content"
 Page 86, line 7; for " $\frac{1}{4}$ to 1 gr" read "2 to 8 grs."
 Page 94, line 34; for "or heavy" read "calcined"
 Page 96, line 16; for "Seven" read "Eight"; for "five" read "six"
 Page 106, line 12; for "MELTNIG" read "MELTING"
 Page 106, line 23; for "uesd" read "used"
 Page 107, line 27; after "visible" read "contains prepared suet"
 Page 113, line 25; for "1" read " $\frac{1}{100}$ "; for " $\frac{1}{8}$ " read " $\frac{1}{100}$ "
 Page 113, line 32; for "dr." read "oz", in two places
 Page 113, line 40; for "13%" read "12%"
 Page 113, line 51; for "1.75 gra." read "2 gra."; for "2 gra." read " $1\frac{1}{2}$ gra."







PREFACE

TO THE TENTH EDITION

IN presenting the tenth edition of this Synopsis, the author desires to draw attention to the fact that, the matter has been entirely re-written and revised to coincide with the British Pharmacopœia of 1914, and that, considerable new material has been included, and various schemes resorted to with a view to simplifying and more emphatically impressing upon the mind of the student, the information that he must acquire.

The introductory matter preceding the classifications of the various preparations has been enlarged upon, in order to more fully meet the requirements of the undergraduate, as well as the graduate in pharmacy or medicine.

The adoption of the centigrade thermometric scale and the metric system of weights and measures, in the 1914 revision of the pharmacopœia, was not unexpected. As students of pharmacy and medicine have been accustomed to use the metric system in connection with the work of chemical, pharmaceutical, physical and pathological laboratories, its official recognition will meet with their approval.

Doses are expressed in terms of both the metric and imperial systems, as a transitional provision, in this book as well as in the pharmacopœia, but it must be remembered that the relation between the metric and the imperial dose of any preparation, is that of approximate equivalence only, and that, for convenience, whole numbers are employed in stating doses expressed according to either system, with but minor deviation from the doses hitherto established by long usage; as fractional differences are thus necessarily ignored, the two sets of whole numbers do not always express exactly the same quantities.

The adoption of the term 'mil' as an abbreviation for milliliter, is important; it is the thousandth part of a liter, and its tenth and hundredth subdivisions are termed decimil and centimil respectively.

The attention of the reader is particularly directed to the Appendix, where certain tables and other valuable information may be found.

With a view to conserving both the time and patience of the busy pharmacist and physician, who have occasion to prepare alcoholic menstrua for the many preparations requiring them, as well as to avoid errors that frequently find their way into hurried calculations, the Alcohol Dilution Table (*vide* page 50), will be found convenient and useful.

TORONTO, February, 1916.

PREFACE

TO THE FIRST EDITION

THE object of this little work is to furnish a convenient method for the study of the official preparations as to their Latin and English titles and synonyms, their composition, methods of preparation, strengths, doses, etc., arranged in classes.

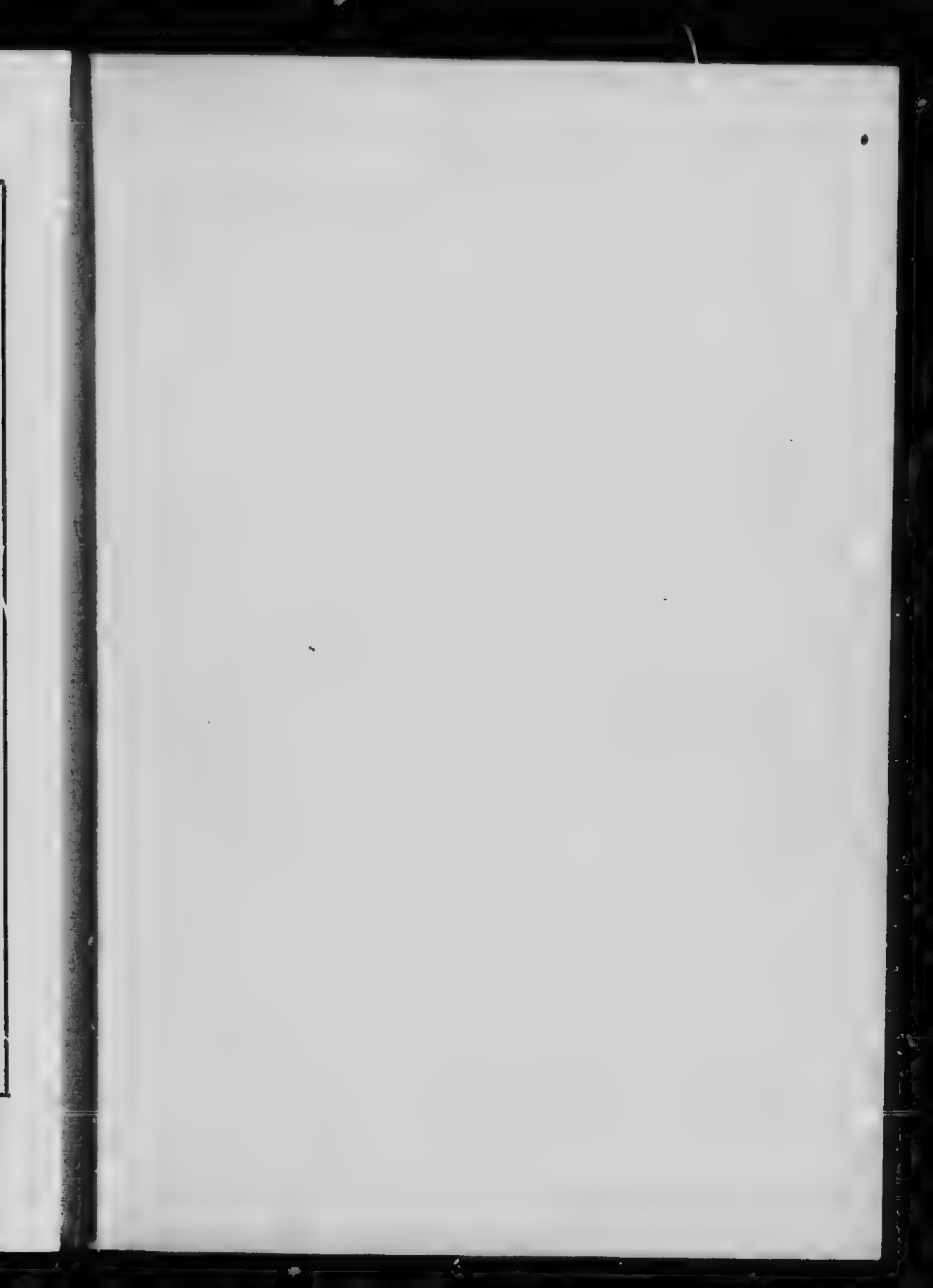
With this end in view, the preparations of the British Pharmacopœia have been tabulated, and in most cases the individual members of each class have been divided into groups, each group presenting some general features in common, as to mode of preparation, ingredients, similarity of active constituents, strength, dose, basis, etc.

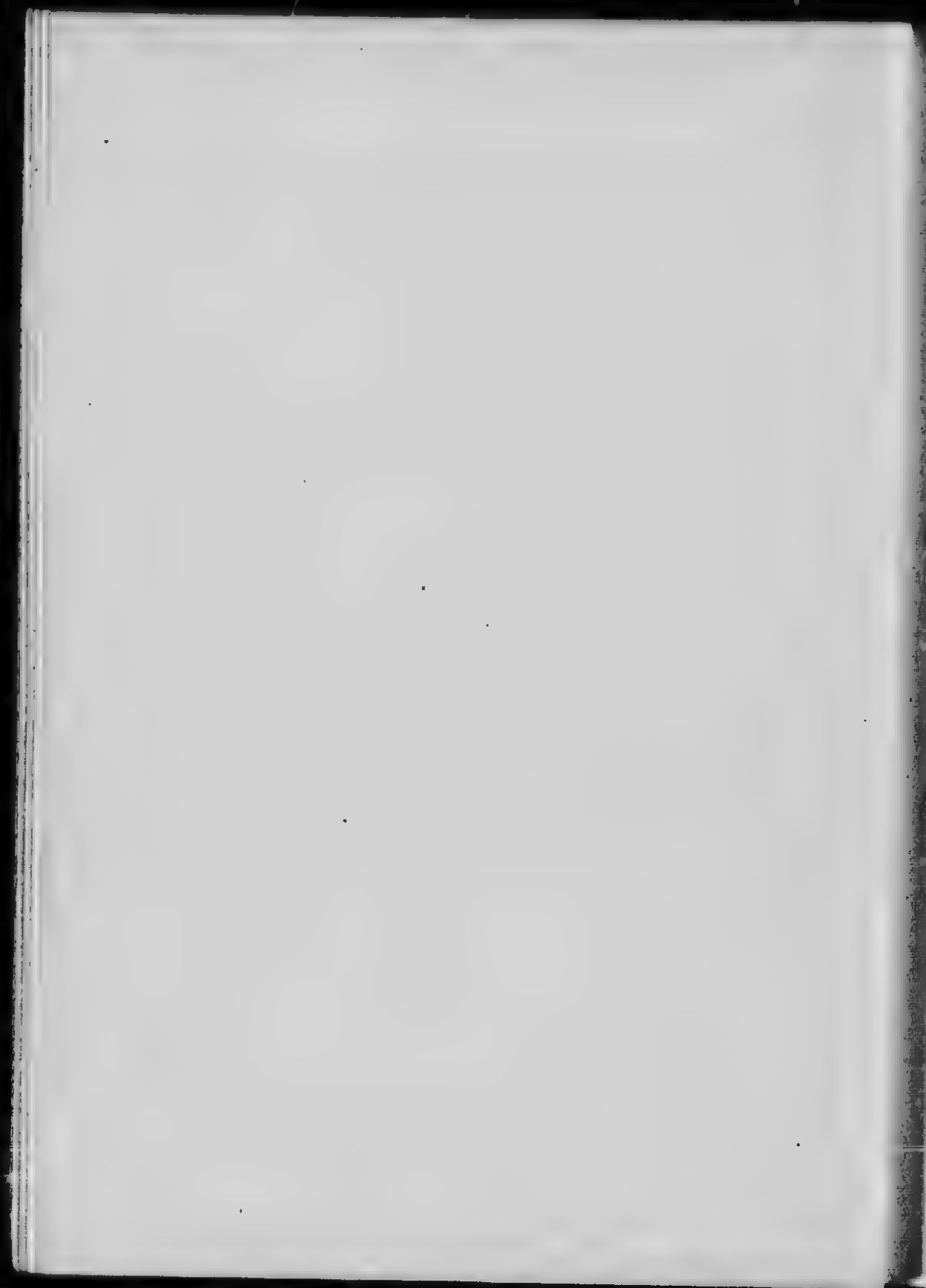
In a synopsis of the nature of which this work partakes, it is impracticable to deal in general, with all of the details in the methods of preparation, or the whys and wherefores of such methods, ingredients, etc., as it is intended that the study of this book shall either precede or supplement the instruction given by an instructor in pharmacy.

The brevity of the matter preceding some of the tabulations and the number of abbreviations made use of in the tables, while detracting from the appearance of the book, may, at first glance, evoke unfavourable criticism, but when the vast amount of information submitted is taken into consideration, as well as the fact that even the occasional study of the book makes one readily familiar with these abbreviations, an entirely different phase of the work is brought into prominence.

The author feels quite sure that the apprentice and student in pharmacy or medicine will find the book an invaluable aid in indelibly stamping upon their minds those facts which are as a rule dry, uninteresting and difficult to retain.

TORONTO, February, 1893.





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PART I.

LIQUID PREPARATIONS OF THE B. P.

ACETA. VINEGARS (MEDICATED).

Solutions of the active constituents of organic drugs, obtained by extraction with acetic acid, either strong or dilute.

Medicated vinegars have been used ever since the days of Hippocrates (400 years B.C.) but they have almost passed out of use, because, being strongly acid preparations, they may be contra-indicated medicinally, and often introduce difficulties through incompatibilities when prescribed with other remedies.

MENSTRUUM.—They were formerly made with wine- or cider-vinegar, but on account of the variability of such menstrua, and the presence of much extractive matter, they were liable to decomposition upon standing, and hence Acetic Acid is now used. Acetic Acid is a good solvent for many plant constituents, possesses antiseptic properties and combines with alkaloids, forming soluble salts with them if the drugs acted upon contain these principles.

PREPARATION.—The official vinegars are made by maceration (*Aceta Scillæ et Urginæ*) or solution (*Acetum Cantharidini*) of the drug with acetic acid.

ACETA.

Three Official Vinegars.

TITLES AND SYNONYMS.	INGREDIENTS. PROCESS.	STRENGTH.	DOSE, ETC.
<i>Acetum:</i> Cantharidini Vinegar of Cantharidin.	Cantharidin, acetic acid, glacial acetic acid. Solution.	1 in 2000.	Externally. Vesicant.
Scillæ Vinegar of Squill.	Bruised Squill, acetic acid, water. Maceration.	About 1 in 4.	5 to 15 minims. (3 to 10 d.mils).
Urginæ Vinegar of Urginea. Vinegar of Indian-Squill.	Bruised Urginea, acetic acid, water. Maceration.	About 1 in 4.	5 to 15 minims. (3 to 10 d.mils).

ACIDA. ACIDS.

Compounds of electro-negative elements or radicals with hydrogen, which hydrogen may be displaced by a metal or a basylous radical, to form a new compound, called a salt.

The FORMULA of an acid, is a group of symbols showing its composition or structure. A chemical formula may be:—EMPIRICAL, when it expresses the simplest ratio of atoms which make up the compound, *e.g.* CH_3O is the empirical formula for hydrogen acetate, $\text{Fe}(\text{OH})_3$ for ferric hydroxide, or MOLECULAR, when it expresses the actual number of atoms of each element in a molecule; it may be identical with the empirical formula, or a multiple of it, *e.g.* $\text{C}_2\text{H}_4\text{O}_2$ is the molecular formula for hydrogen acetate and $\text{Fe}_2(\text{HO})_6$ for ferric hydroxide.

Molecular formulas may be:—

(a) TYPICAL, when the atoms are arranged after a certain type; the most common types are water, HOH , and hydrogen chloride, HCl , *e.g.* $\text{HO}(\text{C}_2\text{H}_3\text{O})$ is hydrogen acetate arranged on the water type, $\text{H}(\text{C}_2\text{H}_3\text{O}_2)$ the same on the hydrogen chloride type.

When written after the water type, the number of hydroxyl (OH) groups indicates the basicity of the acid, the hydrogen of each group being replaceable by a base or a basylous radical, while if expressed after the hydrogen chloride type, the number of hydrogen atoms indicated in the basic position, *i.e.* at the left of the acidulous radical, determines the basicity.

(b) GRAPHIC, when the constitutional composition of the compound is shown by means of connecting bonds; also termed *Structural* or *Constitutional*, *e.g.* $\text{CH}_3\text{—COOH}$, is a graphic formula for hydrogen acetate, or

$$\begin{array}{c} \text{H} \quad \text{O} \\ | \quad || \\ \text{H—C—C—O—H} \\ | \\ \text{H} \end{array}$$

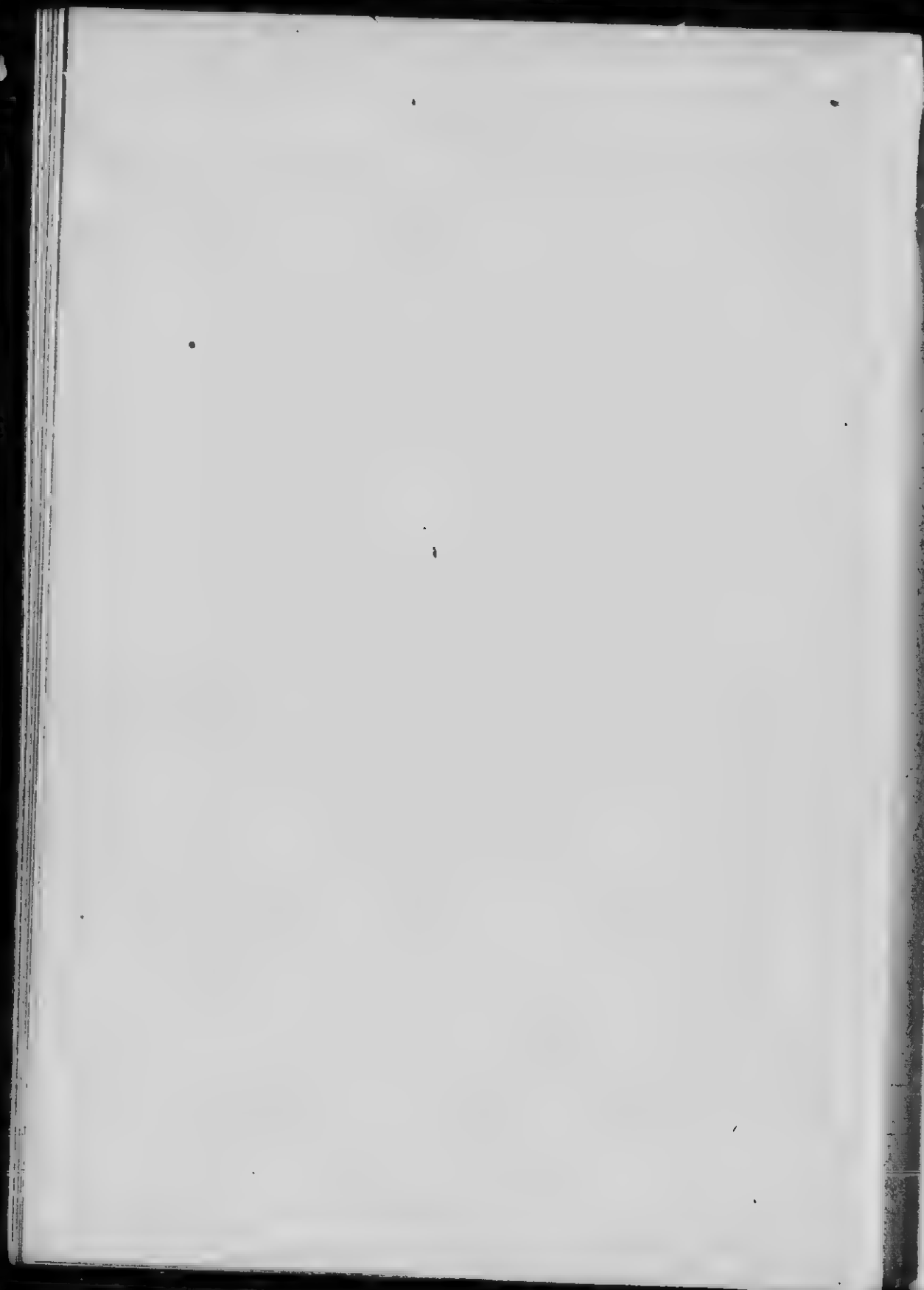
when fully written out, The number of carboxyl

(COOH) groups present indicates the basicity, the hydrogen of each group being the replaceable hydrogen of the acid.

ADMINISTRATION.—The liquid acids which are to be taken internally, should be largely diluted with water before administration, and the mouth and teeth well rinsed with water afterwards.

CLASSIFICATION.—Both liquid and solid acids are classified together in the following table, for the sake of convenience. "Strength" refers to the percentage by weight of absolute acid contained in the compound.

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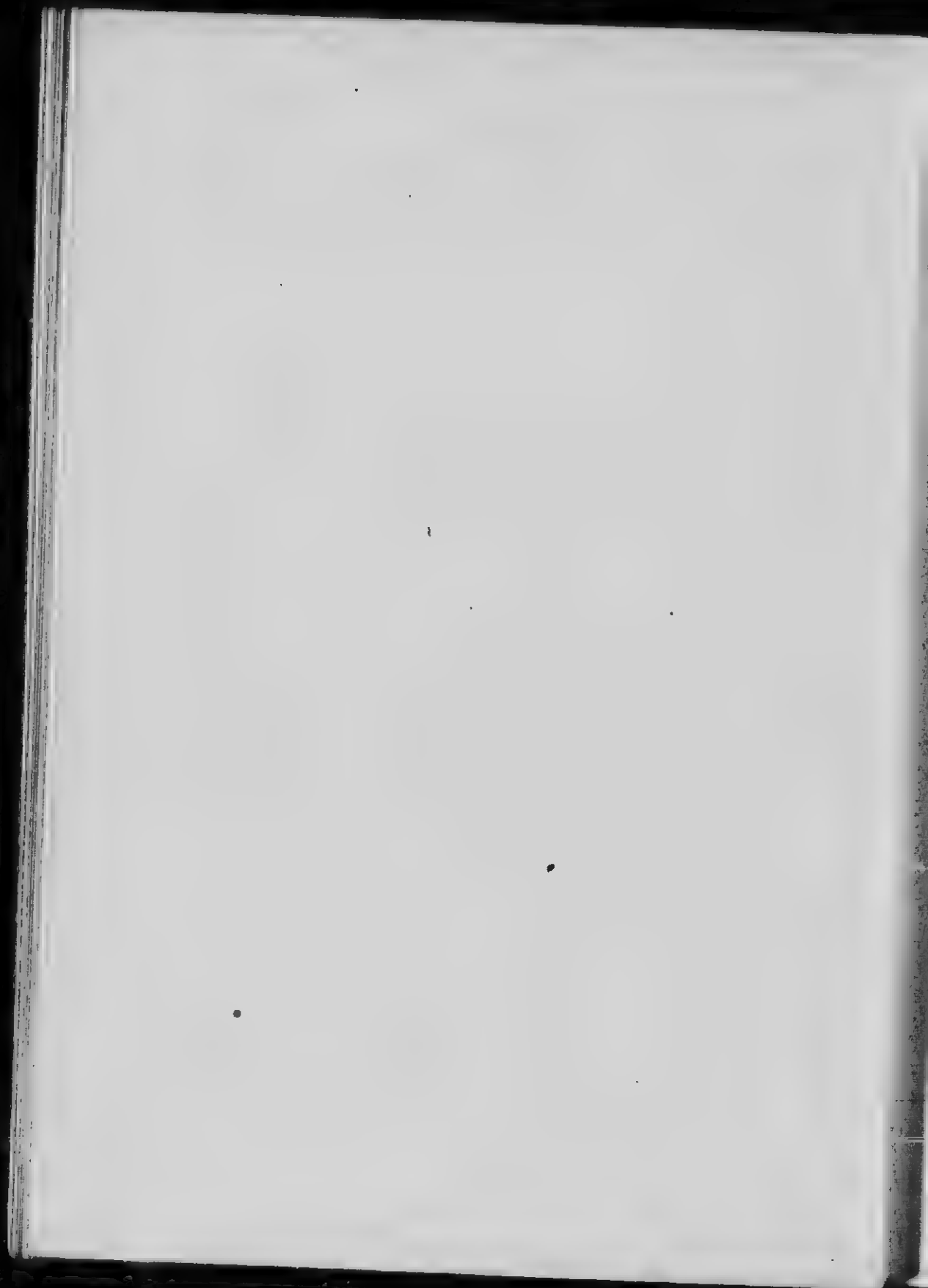
ACIDA.

Thirty-one Official Acids.

TITLES AND SYNONYMS.	STRENGTH AND SPECIFIC GRAVITY.	CHEMICAL COMPOSITION.	DOSE. REMARKS.
<i>Acidum:</i>			
Aceticum Acetic Acid.	33 per cent. Specific gravity, 1.044.	$\text{HC}_2\text{H}_3\text{O}_2$ or CH_3COOH . Mol. wt. 60.032.	Externally.
Aceticum Dilutum Diluted Acetic Acid.	5 per cent. Specific gravity, 1.007.	$\text{HC}_2\text{H}_3\text{O}_2$ CH_3COOH .	$\frac{1}{2}$ to 2 fl. dr. (2 to 4 mils).
Aceticum Glaciale Glacial Acetic Acid.	About 99 per cent. Specific gravity, 1.038.	$\text{HC}_2\text{H}_3\text{O}_2$ or CH_3COOH .	Externally. Caustic.
Acetylsalicylicum Acetylsalicylic Acid.	100 per cent. White powder.	$\text{C}_9\text{H}_7\text{COOCH}_3$ COOH .	5 to 15 grains. (3 to 10 d.grams).
Arseniosum Arsenious Anhydride. Arsenious Oxide. Arsenous Acid. Arsenic.	99.8 per cent. White crystalline solid.	As_2O_3 . Mol. wt. 395.84.	1-64th-1-15th gr. (1 to 4 m.gms).
Benzoicum Benzoic Acid. Hydrogen Benzoate.	100 per cent. White crystals.	$\text{HC}_7\text{H}_5\text{O}_2$ or $\text{C}_6\text{H}_5\text{COOH}$. Mol. wt. 122.048.	5 to 15 grains. (3 to 10 d.gms).
Boricum Boric Acid. Boracic Acid. Orthoboric Acid.	99.5 per cent. White crystals.	H_2BO_3 . Mol. wt. 62.024.	5 to 15 grains. (3 to 10 d.gms).
Carbolicum Phenol. Carbolic Acid. Phenyl Alcohol.	100 per cent. Sp. gr. 1.060—1.066.	$\text{C}_6\text{H}_5\text{OH}$. Mol. wt. 94.048.	1 to 3 grains. (6 to 20 cgms).
Carbol. Liquefactum Liquefied Phenol. Liquefied Carbolic Acid.	About 91 per cent. Sp. gr. 1.067—1.069.	$\text{C}_6\text{H}_5\text{OH}$.	1 to 3 minims. (6 to 18 c. mils).
Chromicum Chromic Anhydride. Chromic Acid. Chromic Oxide.	100 per cent. Crimson crystals.	CrO_3 . Mol. wt. 100.	Externally. Caustic
Citricum Citric Acid. Hydrogen Citrate.	99.5 per cent.	$\text{H}_3\text{C}_6\text{H}_5\text{O}_7 \cdot \text{H}_2\text{O}$ Mol. wt. 210.08.	5 to 20 grains. (3 to 12 dgms).
Hydriodicum Dilutum Diluted Hydriodic Acid.	10 per cent. HI. 1 per cent. H_3PO_3 .	HI. Mol. wt. 127.928.	5 to 10 minims. (3 to 6 c.mils).
Hydrobromicum Dilutum Diluted Hydrobromic Acid.	10 per cent. Specific gravity, 1.077.	HBr. Mol. wt. 80.928.	15 to 60 minims. (1 to 4 mils).
Hydrochloricum Hydrochloric Acid. Muriatic Acid. Chlorhydric Acid. Spirit of Salt.	31.79 per cent. Specific gravity, 1.160.	HCl. Mol. wt. 36.468.	

ACIDA—Continued.

TITLES AND SYNONYMS.	STRENGTH AND SPECIFIC GRAVITY.	CHEMICAL COMPOSITION.	DOSE, REMARKS.
<i>Acidum:</i>			
Hydrochloricum Dilutum Dil. Hydrochloric Acid.	10 per cent. Specific gravity, 1.048.	HCl.	5 to 20 minims. (3 to 12 d.mils).
Hydrocyanicum Dilutum Dil. Hydrocyanic Acid. Diluted Prussic Acid. Dil. Cyanhydric Acid.	2 per cent. Specific gravity, 0.997.	HCN. Mol. wt. 27.018.	2 to 5 minims. (12 to 30 c.mils).
Lacticum Lactic Acid. Hydrogen Lactate.	75 per cent. Specific gravity, 1.21. Contains 10 per cent. lactide, $C_6H_8O_4$.	$HC_2H_3O_2$ or $CH_3CHOH\cdot COOH$. Mol. wt. 90.049.	5 to 30 minims. (1 to 2 mils).
Nitricum Nitric Acid. Aqua Fortis. Azotic Acid.	70 per cent. Specific gravity, 1.42.	HNO_3 Mol. wt. 63.018.	Externally. Caustic.
Nitricum Dilutum Diluted Nitric Acid.	10 per cent. Specific gravity, 1.057.	HNO_3	5 to 20 minims. (3 to 12 d.mils).
Nitro-Hydrochlor. Dil. Dil. Nitro-Hydrochloric Acid. Diluted Nitro-Muriatic Acid. Aqua Regia.	Specific gravity, 1.07.	Contains Cl., HCl , HNO_3 and HNO_2 .	5 to 20 minims. (3 to 12 d.mils).
Oleicum Oleic Acid. Elaic Acid. Hydrogen Oleate.	100 per cent. Sp. gr., 0.890—0.910. Semi-solid below 9° C. (48° F.).	$HC_{18}H_{34}O_2$ or $C_{17}H_{33}COOH$. Mol. 282.272.	For preparing oleates, etc.
Phosphoricum Concentratum Conc. Phosphoric Acid. Conc. Orthophosphoric Acid.	66.3 per cent. Specific gravity, 1.500.	H_3PO_4 Mol. wt. 98.064.	
Phosphoricum Dilutum Diluted Phosphoric Acid.	10 per cent. Specific gravity, 1.057.	H_3PO_4	5 to 20 minims. (3 to 12 d.mils).
Picricum Picric Acid. Carbazotic Acid. Trinitro-phenol.	99 per cent. Yellow crystalline powder. Explosive.	$C_6H_3(NO_2)_3OH$ Mol. wt. 229.054. Sol. water, 90. Alcohol, 10.	1 to 2% solution, as dressing for burns.
Salicylicum Salicylic Acid. Hydrogen Salicylate.	100 per cent. Colorless xtals. Soluble in water 500. Alcohol 3.5, Ether 2	$HC_7H_5O_2$ or $C_6H_4\cdot OH\cdot CO_2H$. Mol. wt. 138.048.	5 to 20 grains. (3 to 12 dgms).
Sulphuricum Sulphuric Acid. Oil of Vitriol.	95 per cent. Specific gravity, 1.841.	H_2SO_4 Mol. wt. 98.086.	Caustic and cor rosive.



ACIDA—Continued.

TITLES AND SYNONYMS.	STRENGTH AND SPECIFIC GRAVITY.	CHEMICAL COMPOSITION.	DOSE, REMARKS.
<i>Acidum:</i>			
Sulphuric Aromaticum Aromatic Sulphuric Acid. Elixir of Vitriol.	13.3 per cent. Sp. gr. 0.917—0.923.	H_2SO_4 and $C_2H_5HSO_4$.	5 to 20 minims. (5 to 12 d.mils).
Sulphuricum Dilutum Diluted Sulphuric Acid.	10 per cent. Specific gravity, 1.069.	H_2SO_4	5 to 20 minims. (5 to 12 d.mils).
Sulphurosum Sulphurous Acid.	5 per cent. SO_2 or 6.4 per cent. H_2SO_3 . Specific gravity, 1.035.	H_2SO_3 Mol. wt. 82.086.	$\frac{1}{4}$ to 1 fl. dr. (2 to 4 mils).
Tannicum Tannic Acid. Gallotannic Acid. Tannin.	100 per cent. Crystalline powder.	$C_{14}H_{10}O_7 \cdot 2H_2O$. Mol. wt. 322.08.	3 to 5 grains. (3 to 6 d.gms).
Tartaricum Tartaric Acid. Hydrogen Tartrate. Dioxy succinic Acid.	99 per cent. Colorless crystals.	$H_2C_4H_4O_6$ or $(CHOH)_2(CO_2H)_2$. Mol. wt. 150.048.	5 to 20 grains. (5 to 12 d.gms).

AQUÆ. WATERS (MEDICATED WATERS).

Aqueous solutions of volatile substances.

Aqua Destillata (Distilled Water) refers to the product obtained by distillation from only good natural potable water, *i.e.* ordinary clean tap or spring water; starting with ten gallons of water, the first half-gallon of distillate (which contains gases and volatile compounds) should be rejected, and the next eight gallons collected, thereby avoiding the decomposition products from ammonium compounds and organic matter which often contaminate the last portions of the water in the still.

Medicated waters are, as a class, mainly simple aromatics, commonly used as solvents or vehicles for the administration of the more potent or unpleasant medicinal substances, imparting to them an agreeable flavor and warm carminative qualities. Cherry-Laurel Water must be noted as the exception, it being a potent preparation, owing to the prussic acid (one of the products of the hydrolysis of amygdalin, the glucoside found in cherry-laurel leaves) which it contains; it is standardized to one-tenth per cent. of hydrocyanic acid.

PREPARATION.—Two of the waters are prepared by *Simple Solution*, viz. Aquæ Camphoræ, Chloroformi, while the others are made by *Distillation*; ten by distilling water with which the aromatic plant-drug has been

mixed, viz., *Aquæ Anethi*, *Anisi*, *Aurantii Floris*, *Carui*, *Cinnamomi*, *Fœniculi*, *Laurocerasi*, *Pimentæ*, *Rosæ*, *Sambuci*; while two, *Aquæ Menthæ Piperitæ*, *Menthæ Viridis*, are made by distilling the corresponding essential oil with water.

Aq. Aurantii Floris et *Aq. Rosæ* are not prepared by the pharmacist but are imported from the manufacturers of volatile oils, who recover them as a by-product of the extraction of volatile oils: these represent saturated solutions of the corresponding volatile oils obtained from fresh flowers. They are termed "triple strength," and are to be diluted before using, with two volumes of distilled water. They should show no reactions for lead, zinc, or copper contamination, emanating from the metallic containers in which they are stored and shipped.

ALTERNATIVE PREPARATIONS.—For use in tropical and subtropical parts of the Empire, the B.P. sanctions the substitution of the following medicated waters in place of the corresponding *Aquæ* of the text of the pharmacopœia.

AQUÆ OLEI ANETHI, ANISI, CARUI, CINNAMOMI, FœNICULI, MENTHÆ, PIPERITÆ, MENTHÆ VIRIDIS. Triturate the corresponding essential oil with twice its weight of Calcium Phosphate, and five hundred times its volume of distilled water, and filter the mixture. The object of the calcium phosphate is simply to enable the finer subdivision of the oil, thereby furnishing greater surface for the action of the solvent.

STORING OF WATERS.—The occasional appearance of *conserve* in certain of the medicated waters, which renders them unsightly and unfit for dispensing, is due to the presence of sporules derived from the air, and may be prevented by keeping in bottles so arranged that air can enter only after having passed through a pellet of cotton, with which the neck of the bottle may be plugged, before inserting the stopper. The addition of spirit as an antiseptic is unsatisfactory.

UNOFFICIAL METHODS.—Purified Talcum may be advantageously employed in the place of calcium phosphate, for the extemporaneous preparation of medicated waters. Magnesium Carbonate is objectionable, as it is slightly soluble, and the resulting waters are faintly alkaline, causing decompositions with many sensitive metallic and alkaloidal salts, and reacts with oils with which they may be dispensed.

The Hot-Water Method is an excellent one; the volatile oil may be dropped upon either shredded filter paper, and shaken with hot water in a strong stoppered bottle for some time, or dropped into a strong jug and

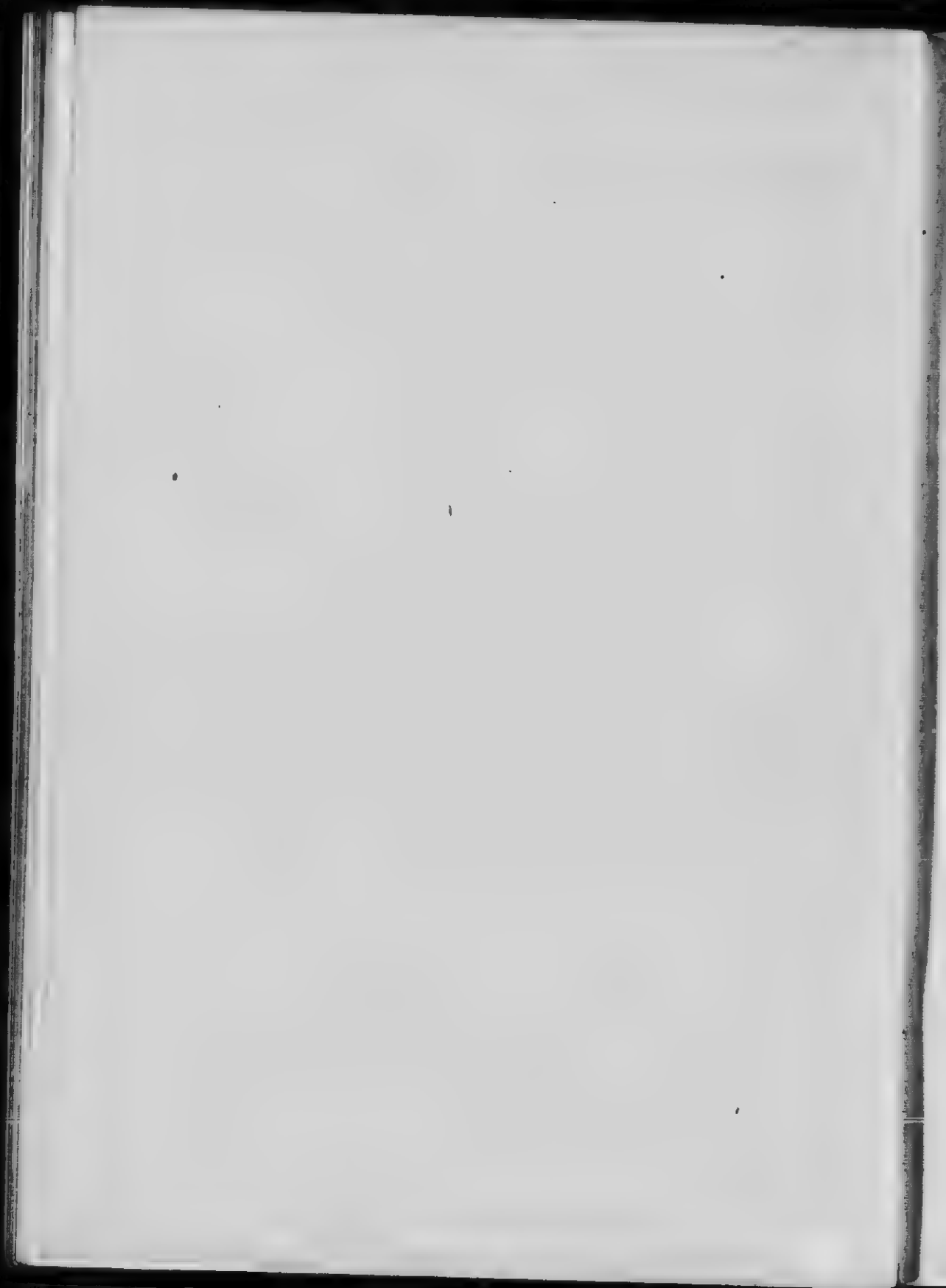
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flowed around the sides, after which hot water may be added and the mixture agitated till cold; in either case, subsequent filtration is necessary.

Doses.—As the medicated waters, with the exception of Aq. Lauro-cerasi, are harmless aromatic fluids, no official doses are given, hence those stated in parenthesis in the following table, are not official doses.

AQUÆ

Thirteen Official Waters, including Aqua Destillata.

TITLES AND SYNONYMS.	INGREDIENTS AND PROCESS.	STRENGTH.	DOSE.
Aquæ:			
Anethi Dill Water.	Dill-fruit. Distillation.	1 in 10.	(1 to 3 fl. dra.)
Anisi Anise Water.	Anise-fruit. Distillation.	1 in 10.	(1 to 3 fl. dra.)
Aurantii Floris Orange-Flower Water. Aqua Naphæ.	Fresh Bitter Orange-flowers. Distillation.	Saturated sol. of volatile oil.	(1 to 3 fl. dra.)
Camphoræ Camphor Water. Mistura Camphoræ.	Camphor. Rect. Spt. Solution.	1 in 1000.	(1 to 3 fl. dra.)
Carui Caraway Water.	Caraway-fruit. Distillation.	1 in 10.	(1 to 3 fl. dra.)
Chloroformi Chloroform Water.	Chlorof. and dist. water Solution.	1 in 400.	(1 to 6 fl. dra.)
Cinnamomi Cinnamon Water	Cinnamon Bark Distillation.	1 in 10	(1 to 3 fl. dra.)
Destillata Distilled Water.	Distillation of natural potable water.		
Feniculi Fennel Water.	Fennel-fruit. Distillation.	1 in 10.	(1 to 3 fl. dra.)
Laurocerasi Cherry-Laurel Water.	The fresh leaves. Distillation and Standardization.	Standardised to $\frac{1}{10}$ p.c. HCN.	$\frac{1}{4}$ to 2 fl. dra. 2 to 8 mls.
Mentha Piperitæ Peppermint Water.	Oil of Peppermint. Distillation.	1 in 1000.	(1 to 6 fl. dra.)
Mentha Viridis Spearmint Water.	Oil of Spearmint. Distillation.	1 in 1000.	1 to 6 fl. dra.
Rosæ Rose Water.	Fresh Rose flowers. Distillation.	Saturated sol. of volatile oil.	(1 to 3 fl. dra.)

COLLODIA. COLLODIONS.

Solutions, for external use only, of pyroxylin (di-nitrocellulose, so-called gun cotton) in acetic ether or acetone, or in a mixture of ether and rectified spirit, either with or without medication.

USES.—When collodion is painted on a dry surface, the volatile solvent quickly evaporates, leaving an adhesive film upon the skin, which is not affected by water or alcohol.

The unmedicated collodions are often used instead of adhesive or isinglass plaster, for the purpose of covering and protecting abraded surfaces or ulcers, or to hold together the edges of minor wounds, or to prevent bed sores. The powerfully contractile power of *Collodium* frequently renders its use painful, hence *Collodium Flexile* is often preferred, owing to the fact that, on the evaporation of the volatile solvent, a soft, tough, elastic film remains.

Collodion furnishes a medium whereby many important medications may be applied externally, e.g. iodine, mercuric chloride, salicylic acid, tannin, extract Indian hemp, croton oil, resorcin, iodoform, many alkaloids, etc.—in fact almost any ether-soluble substance, excepting carbolic acid.

Since pyroxylin is insoluble in water, the addition of aqueous preparations to a collodion will cause precipitation, and hence all substances soluble only in water or in weak spirits, are excluded from admixture.

DISPENSING.—On account of the volatile nature of ether, the collodion should be kept in tightly corked bottles in a cool place, and because of the inflammable nature of both the pyroxylin and the ether-alcohol, it should not be dispensed or applied in proximity to a light or fire.

Inasmuch as collodions are almost invariably to be applied by means of a camels-hair brush, modern pharmaceutical practice prompts their being dispensed in bottles containing stoppers arranged for holding the brush, to prevent the latter from drying out—a very annoying occurrence. To avoid “fixing” the cork, no collodion should be permitted to remain adhering to the lip of the bottle.

COLLODIA.

Three Official Collodions.

TITLES AND SYNONYMS.	INGREDIENTS.	REMARKS.
Collodium Collodion. Contractile Collodion.	Pyroxylin 21 Gms. Ether 750 mls. Rect. Spt. 250 mls.	Leaves a thin transparent, contractile film.
Collodium Flexile Flexible Collodion. Collodium Elasticum.	Canada Turpentine 4 Gms. Castor Oil 2 Gms. Collodion 94 mls.	Leaves an elastic film.
Collodium Vesicans Blistering Collodion. Cantharidal Collodion.	Pyroxylin 2.5 Gms. Cochineal 1 Gm. Blistering Liquid 100 mls.	Leaves a red film. Epispastic and vesicant.

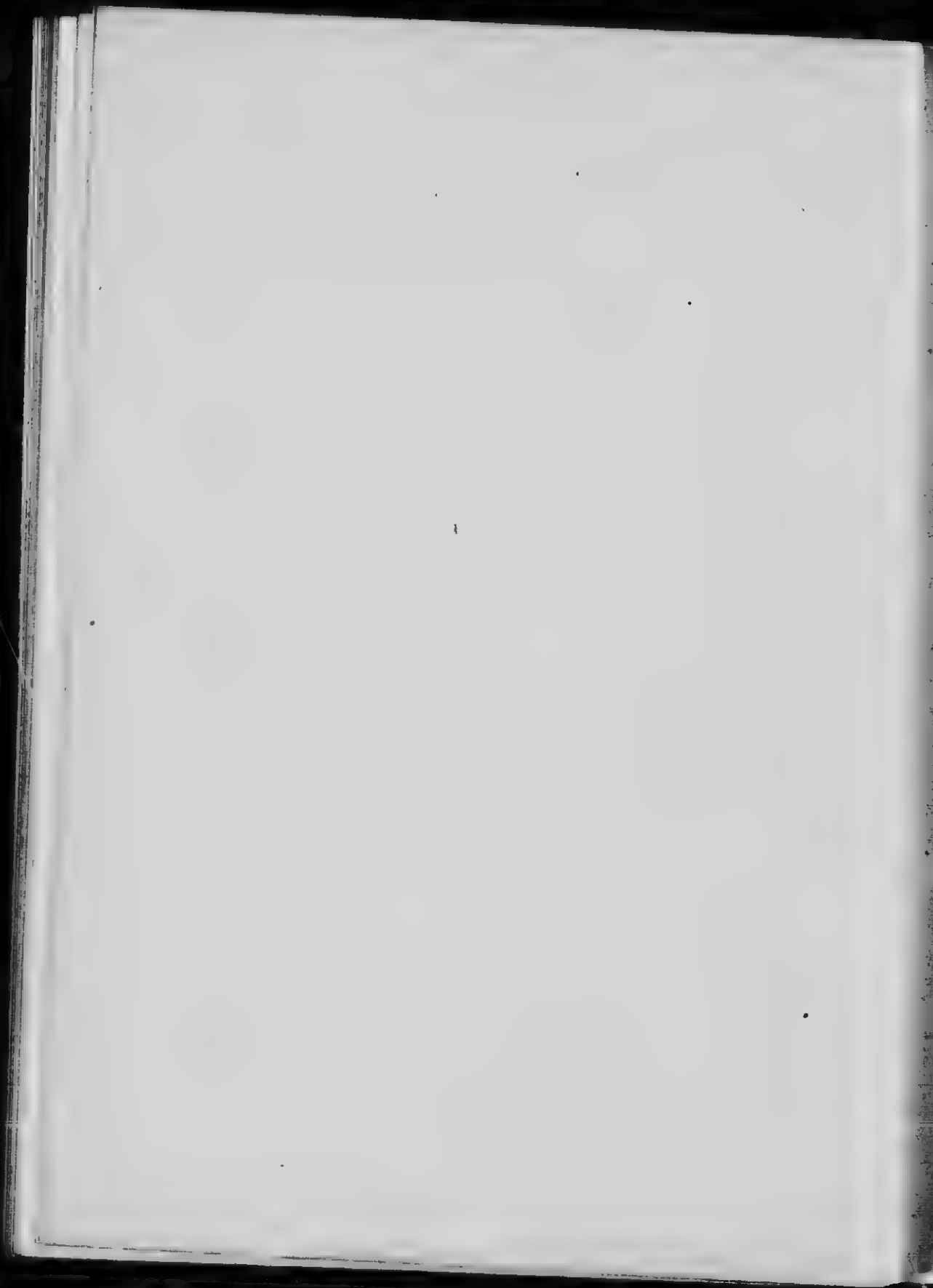
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DECOCTA. DECOCTIONS.

Solutions of the active principles of plant-drugs, together with extractive, obtained by boiling with water. One of the oldest classes of galenical preparations, but fast declining in use.

PREPARATION.—Boiling the coarsely comminuted drug with distilled water for ten minutes (or more) in a covered vessel, straining when cold, and then pouring enough distilled water over the contents of the strainer to make the required volume. The strained decoction may become unsightly through the further deposition of apotheme or matter soluble only in hot water, but the pharmacist should follow the instructions of the B.P., or the intention of the physician, and not sacrifice medicinal value to elegance.

In preparing decoctions, *cold* water is to be used at the outset, thereby enabling the complete extraction from the drug of all of its water soluble principles by the gradually heated water, subsequent coagulation of the albuminous matter taking place as the heat is increased to near the point of ebullition. If the drug were to be at once placed into boiling water, the albuminous contents of the cells would become coagulated, and thus greatly hinder the extraction of other native constituents. Aromatic substances must not be extracted by decoction, as the volatile principles would be dissipated during ebullition.

INCOMPATIBLES.—Salts of the heavy metals yield unsatisfactory dark-colored preparations (chiefly tannates) owing to the presence of tannin in most drugs represented in the Decoctions. For the same reason, these preparations should never be made in metallic vessels.

CAUTION.—The dilution of liquid extracts or other concentrated *alcoholic* preparations, for the purpose of furnishing Decoctions extemporaneously, is reprehensible on therapeutical grounds, as rarely do the alcoholic preparations contain the same plant constituents that may be extracted with water.

PRESERVATION.—As decoctions contain no antiseptics, they are short lived, and soon undergo fermentative or putrefactive changes or develop fungous growths, which render them valueless.

SYNOPSIS OF U. S. PREPARATIONS.

DECOCTA.

Seven Official Decoctions. Dose, $\frac{1}{4}$ to 2 fluid ounces (15 to 16 mls.)

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH. REMARKS.
<i>Decoctum:</i>		
Acaciæ Corticis Decoction of Acacia Bark. Decoction of Babul Bark.	Bruised Acacia Bark. (<i>Acacia arabica</i> vel <i>decurrens</i>).	6 in 100. Astringent.
Agropyri Decoction of Couch-Grass. Decoction of Triticum. Decoction of Dog-Grass.	Cut Couch-grass. (<i>Agropyron repens</i>).	1 in 20. Demulcent- Diuretic.
Aloes Compositum Comp. Decoction of Aloes. Baume de Vie.	Ext. aloes, myrrh, potassium carbonate, ext. liquorice, and comp. tinct. cardamom.	Ext. aloes 1, myrrh 0.5 in 100.
Gossypii Radicis Corticis Decoction of Cotton Root Bark.	Bruised Cotton-root bark.	1 in 5. Abortifacient.
Hæmatoxyli Decoction of Logwood.	Logwood chips, Cinnamon bark.	1 in 20. Astringent
Ispaghulæ Decoction of Ispaghula.	Ispaghula seeds. (<i>Plantago ovata</i>).	1.5 in 100. Demulcent. Resembles Linseed.
Sappan Decoction of Sappan Wood.	Sappan-wood in chips, Cinnamon bark.	1 in 20. Astringent, Resembles Logwood.

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EXTRACTA LIQUIDA. LIQUID EXTRACTS. (FLUID EXTRACTS).

Permanent, concentrated solutions of the active constituents of plant drugs, of such a strength that each minim represents the medicinal activity of about one grain of powdered drug. The advantages found in this class of galenicals are: Concentration, thereby enabling the administration of small doses, and their use in making other preparations; Dosage, each *mil* corresponding to a *gram* of the drug.

PHARMACEUTICAL PROCESSES.—The processes involved in preparing this class of preparations are mainly: percolation, re-percolation and maceration, and usually accompanied by evaporation. Repercolation is resorted to in preparing the Liquid Extracts of Belladonna and Nux Vomica.

AQUEOUS LIQUID EXTRACTS.—The Liquid Extracts made by extraction with water, viz.: couch-grass, bael, cascara sagrada, ergot, liquorice and opium have rectified spirit added at the end of the process, in varying proportions, for preservation, but in order to ensure against fermentation, in tropical and sub-tropical parts of the Empire, any Liquid Extract may have the proportion of rectified spirit increased to one-fourth the weight of the extract.

STANDARDIZED LIQUID EXTRACTS.—Eight of the official Liquid Extracts are standardized, to ensure the presence of a definite proportion of alkaloidal constituents. Six of this number are assayed during their preparation, and by concentration or dilution made up the volume required to represent a specified alkaloidal strength. The following are the standardized members of this class of preparations:—

Belladonna, contains 0.75 gram Belladonna alkaloids in 100 millilitres, or 0.75 grain in 110 minims.

Cinchona, contains 5 grams Cinchona alkaloids in 100 millilitres, or 5 grains in 110 minims.

Hydrastis, contains 2 grams Hydrastine in 100 millilitres, or 2 grains in 110 minims.

Ipecacuanha, contains 2 grams Ipecacuanha alkaloids in 100 millilitres, or 2 grains in 110 minims.

Nux Vomica, contains 1.5 grams Strychnine in 100 millilitres, or 1.5 grains in 110 minims.

Opium, contains 0.75 gram Morphine in 100 millilitres, or 0.75 grain in 110 minims.

Male Fern, contains 20 grams Filicin (Filicic Acid) in 100 grams, or 20 per cent Filicin.

Liquorice, contains a definite proportion of extractive matter, through the evaporation of the precipitate to sp. gr. 1.200, before adding the rectified spirit.

PRESERVATION.—Liquid Extracts should be kept in tightly-corked bottles of dark-amber glass, and should be investigated, and if inert, should be removed by filtration, but if active, should be re-suspended by shaking before dispensing.

EXTRACTA LIQUIDA.

Eighteen Official Liquid (Fluid) Extracts.

TITLES AND SYNONYMS.	INGREDIENTS.	PROCESS. REMARKS.	DOSE. PREPARATIONS.
<i>Extractum Liquidum:</i> Agropyri Liq. Ext. Couch Grass. Liq. Ext. Triticum. Liq. Ext. Dog Grass.	Cut Couch Grass. Boiling Water. Contains 20 per cent. Rect. Spt.	Decoction and Evaporation.	1 to 2 fl. drs. (4 to 8 mds).
Belæ Liq. Ext. Bael Liq. Ext. Bengal Quince.	Bruised Bael Fruit. Chloroform Water. Contains 25 per cent. Rect. Spt.	Remaceration and Evaporation.	1 to 2 fl. drs. (4 to 8 mds).
Belladonnæ Liq. Ext. Belladonna.	Powd. Belladonna Root. Rect. Spt. (7). Water (1).	Repercolation Standardized to 0.75% Alkaloids.	Lix. Bellad. Suppos. Bellad. Ung. Bellad.
Cascaræ Sagradæ Liq. Ext. Cascara Sagrada. Liq. Ext. Rhamnus Purshiana.	Powd. Cascara Bark. Distilled Water. Contains 25 per cent. Rect. Spt.	Percolation and Evaporation.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mds). Syr. Casc. Aromat.
Cinchonæ Liq. Ext. Cinchona. Liq. Ext. Red Cinchona.	Powd. Red Cinchona Bark. Hydrochloric Ac., Glyc., Water. Contains 12.5 per cent. Rect. Spt.	Percolation. Evaporation. Standardized to 5% Alkaloids.	5 to 15 minims. (3 to 10 d. mds).
Ergotæ Liq. Ext. Ergot.	Crushed Ergot. Distilled Water. Contains 37.5 per cent. Rect. Spt.	Maceration and Evaporation.	10 to 30 minims. (6 to 18 d. mds).
Filicis Liq. Ext. Male Fern. Oleo-Resin Male Fern.	Powd. Male Fern. Ether.	Percolation and Evaporation. Standardized to 20% Filicin.	45 to 90 minims. (3 to 6 mds).



EXTRACTA LIQUIDA—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	PROCESS. REMARKS.	PREPARATIONS.
<i>Extractum Liquidum:</i> Glycyrrhizæ Liq. Ext. Liquorice. Liq. Ext. Glycyrrhizæ.	Powd. Liquorice Root. Chloroform Water. Contains 25 per cent. Rect. Spt.	Remaceration. Evap. to Sp. Gr. 1.300— then add Rect. Spt. Percolation.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mds). Miss. Sennæ Co. $\frac{1}{2}$ to 1 fl. dr. (2 to 4 mds).
Gossypii Radicis Corticis Liq. Ext. Cotton Root Bark.	Powd. Cotton Root Bark. Rect. Spt. and Glycerin.		
Grindellæ Liq. Ext. Grindella.	Powd. Grindella Herb. Rect. Spt., Water and NaHCO_3 . Contains 25 per cent. Rect. Spt.	Distillation. Residue dis- solved in aq. solution of NaHCO_3 and R.S. added. Percolation.	10 to 20 minima. (6 to 12 d. mds).
Hamamelidis Liq. Ext. Hamamelis. Liq. Ext. Witch Hazel.	Powd. Witch Hazel Leaves. Alcohol 45%.		5 to 15 minima. (3 to 10 d. mds). Ung. <i>Hamamelidis</i> .
Hydrastis Liq. Ext. Hydrastis. Liq. Ext. Goldenecal.	Powd. Hydrastis Rhizome. Alcohol 60%.	Percolation. Standardized to 2% Hy- drastine.	5 to 15 minima. (3 to 10 d. mds).
Ipecacuanhæ Liq. Ext. Ipecacuanha. Liq. Ext. Ipecac.	Ipecac. Root, 120 powder. Rectified Spirit.	Percolation. Standardized to 2% Albu- minoids.	$\frac{1}{2}$ to 2 minima. (3 to 12 c. mds). Vinum <i>Ipecac.</i>
Kavæ Liq. Ext. Kava.	Powd. Kava Rhizome. Rect. Spt. and Alc. 45%.	Percolation.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mds).
Nucis Vomica Liq. Ext. Nux Vomica Liq. Ext. Strychni.	Powd. Nux Vomica. Alcohol 70%. Hard Paraffin, to remove fat.	Repercolation. Removal of fat. Standardized to 1.5% Strychnine.	1 to 3 minims. (6 to 18 c. mds).
Opii Liq. Ext. Opium.	Lry Extract of Opium. Rect. Spt. and Water.	Maceration. Stand.-reduced to 0.75% Morphine. Percolation.	5 to 30 minima. (3 to 18 d. mds).
Picrorhizæ Liq. Ext. Picrorhiza. Liq. Ext. Kali-Kutki.	Powd. Picrorhiza Rhizome. Alcohol 60%.		15 to 60 minima. (1 to 4 mds).
Viburni Liq. Ext. Black Haw. Liq. Ext. Viburnum.	Powd. Black Haw Bark. Alcohol 70%.	Percolation.	1 to 2 fl. drs. (4 to 8 mds).

GLYCERINA. GLYCERINS. (GLYCEROLS. GLYCERITES.)

Stable solutions of medicinal substances in glycerin. Mostly for local or external action, applied by means of a brush, swab or probang. They are principally prepared by triturating the medicating ingredient with glycerin, and in some instances completing the solution by heating, with constant stirring.

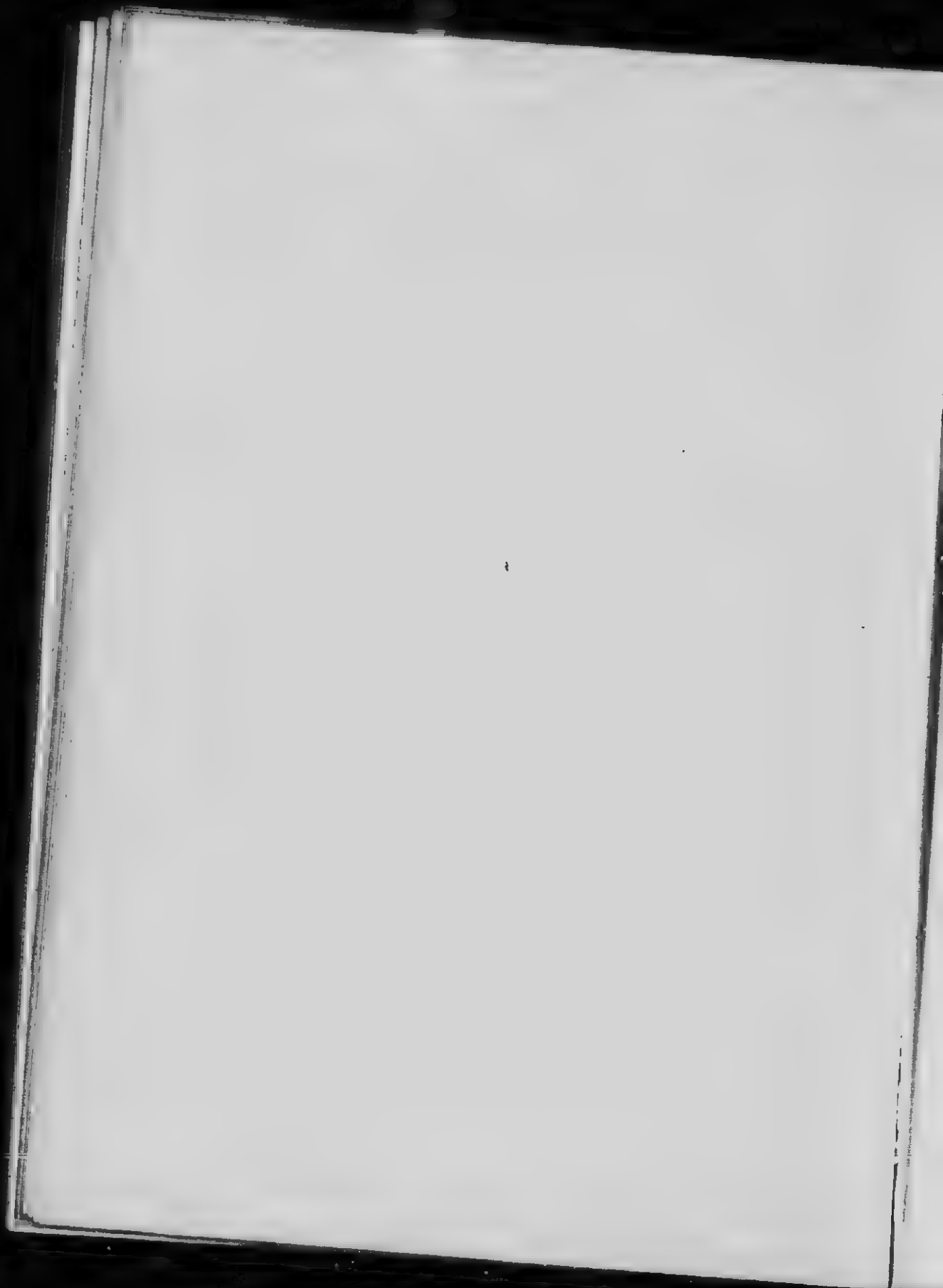
PERMANENCY.—Glycerins keep well, owing to the antiseptic properties of the solvent used, which protects sensitive compounds from oxidation and change, yielding permanent solutions, which are readily miscible with alcohol and water, even though they may contain oily or resinous substances. They do not, like aqueous or alcoholic solutions, dry up when applied to the skin.

GLYCERINUM.—Glycerin. Glycerol. A trihydric alcohol, $C_3H_7(OH)_3$. Obtained by the hydrolysis of fats by means of alkalis or of superheated steam. Sp. gr. 1.260, corresponding to 98% glycerin and 2% water.

GLYCERINA.*Nine Official Glycerins.*

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	REMARKS. DOSE.
<i>Glycerinum:</i>			
Acidi Borici Glycerin of Boric Acid. Glycerin of Boro-Glycerin. Glycerin of Glyceryl Borate.	<i>Glycerin and:</i> Boric acid.	50 per cent. of glyceryl bor- ate. $C_3H_7BO_3$	Chemical com- bination at 150° C.
Acidi Carbolici Glycerin of Carbollic Acid. Glycerin of Phenol.	Phenol.	1 in 5 w/v.	Mixes clear with water.
Acidi Tannici Glycerin of Tannic Acid. Glycerin of Tannin.	Tannic acid.	1 in 5 w/v.	Local astrin- gent.
Aluminis Glycerin of Alum.	Purified alum and water.	1 in 6 w/v.	Local astrin-
Amyli Glyce. n of Starch. Plasma. Glycamyl.	Starch and water.	10 per cent.	Excipient, oint- ment base and poultice.
Boracis Glycerin of Borax.	Purified borax.	1 in 6 w/v.	Local Sedative Contains free boric acid
Pepsini Glycerin of Pepsin.	Pepsin, HCl. and water.	5's gra. in each fl. dr.	Digestant. 1 to 2 fl. drs.
Plumbi Subacetatis Glyc. Subacetate of Lead.	Goulard's extract, water and glycerin.	Sp. Gr. 1.48 1 in 4 (w/v).	Externally. Astringent. Sedative.
Tragacanthæ Glycerin of Tragacanth.	Powd. tragacanth and water.	1 in 5 w/v.	Excipient and suspending medium.

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INFUSA. INFUSIONS. (TEAS.)

Aqueous solutions of such constituents of plant drugs as may be extracted by infusing with boiling water. In addition to the desired constituents, the following being also soluble in hot water are usually present in the finished product, viz.: starch, sugar, gum, pectin and salts.

GENERAL METHOD OF PREPARATION.—Boiling distilled water is poured upon the comminuted drug, which has been placed in a previously warmed, closely covered vessel. The drug is allowed to remain in contact with the solvent for a specified time, (usually fifteen minutes, but in exceptional cases longer) and the resulting solution is separated from the marc by colation while still warm. The marc should not be pressed to yield a maximum quantity of liquid product.

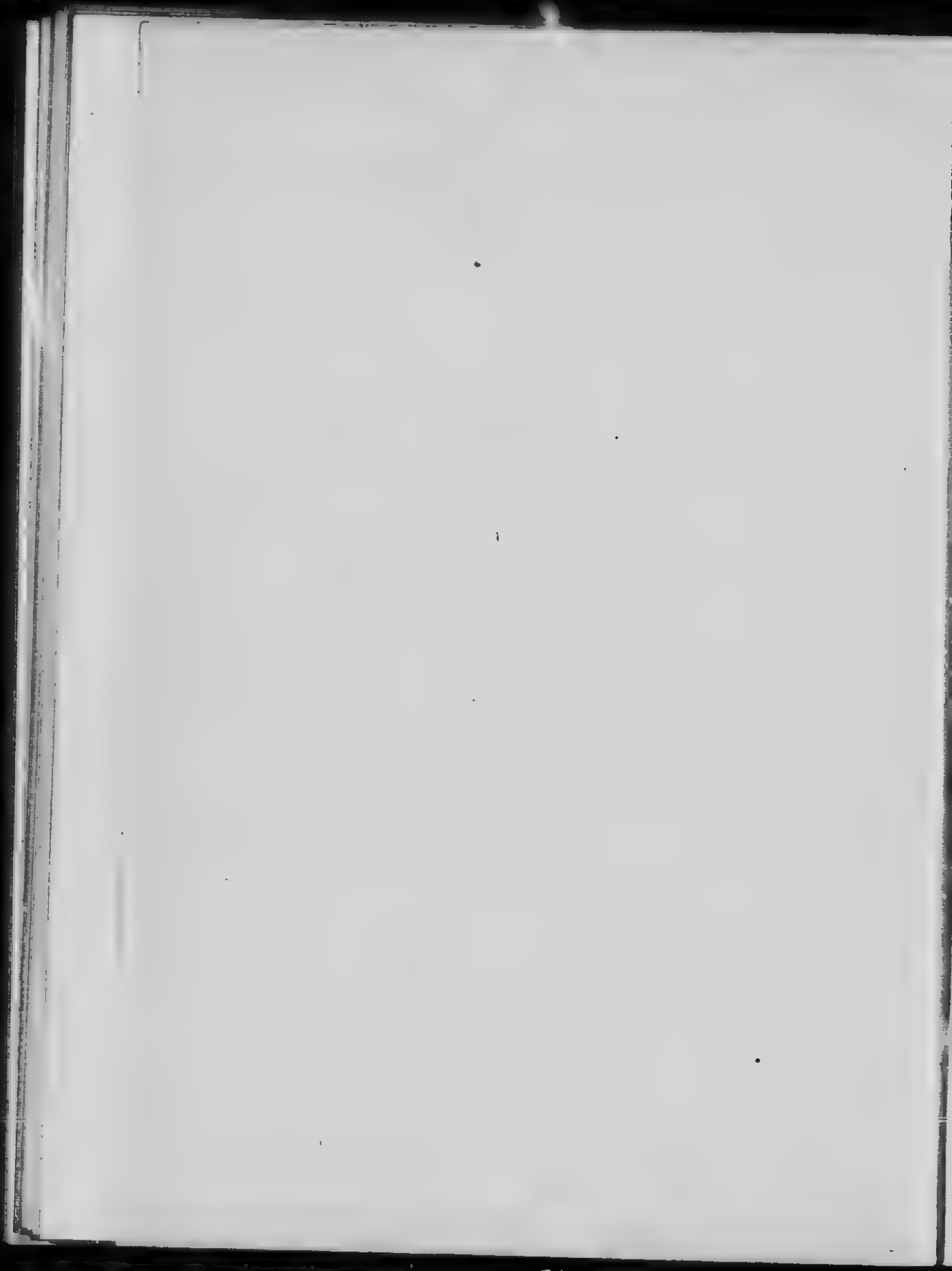
EXCEPTIONS.—Infusions Calumba and Quassia are prepared by *maceration* with cold water, as their medicinal constituents are nearly as readily extracted with cold water as with boiling water, while the latter would also extract the starch in calumba, and the objectionable bitter principle in quassia.

INFUSION vs. DECOCTION.—Drugs which contain *volatile* medicinal constituents, as valerian, orange peel, buchu, cloves, cascarilla, ergot, hops, roses, serpentaria, etc., and which if exhausted by decoction would have their aromatic principles dissipated by the higher degree of heat required, or its longer application, are prepared in the form of Infusions.

PRESERVATION.—Inasmuch as infusions are made with water and contain no antiseptics, they readily undergo fermentative or putrefactive decomposition, and cannot, under ordinary conditions, be kept without alteration for more than a few days, hence should not be kept in stock, but made extemporaneously, as occasion demands.

CAUTION.—This line of preparations should not be made from liquid extracts, as aqueous preparations have a different therapeutic effect than alcoholic preparations of the same drug, since different menstrua are solvents for different plant-principles, or different proportions of the principles. Moreover, the addition of concentrated alcoholic preparations to water, is generally followed by precipitation, which makes the product of such dilution unsightly, and which, if filtered, often removes most of the activity of the drug, leaving a worthless preparation.

Twenty Official Infusions.		INFUSA.			General Dose, $\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).	
TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	DURATION OF PROCESS. REMARKS.	DOSE.		
<i>Infusum:</i> Alstoniæ Infusion of Alstonia. Infusion of Dita Bark.	Bruised Alstonia Bark.	1 in 20.	30 minutes.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		
Aurantii Infusion of Orange Peel.	Dry Bitter-Orange Peel.	1 in 20.	15 minutes.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		
Aurantii Compositum Comp. Infusion Orange Peel.	Orange Peel, Lemon Peel and bruised Cloves.	1 in 40.	15 minutes.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		
Buchu Infusion of Buchu.	Buchu Leaves.	1 in 20.	15 minutes.	1 to 2 fl. oz. (30 to 60 mls).		
Calumbæ Infusion of Calumba. Infusion of Columbo.	Cut Calumba Root. Cold distilled water.	1 in 20.	30 minutes. Contains no starch.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		
Caryophylli Infusion of Cloves.	Bruised Cloves.	1 in 40.	15 minutes.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		
Cascarillæ Infusion of Cascarilla.	Powd. Cascarilla Bark.	1 in 20.	15 minutes.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		
Chiratae Infusion of Chiretta.	Cut Chiretta.	1 in 20.	15 minutes.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		
Cinchonæ Acidum Acid Infusion of Cinchona.	Red Cinchona Bark, Aromatic Sulphuric Acid.	1 in 20.	One hour. Contains Acid Alkaloidal Sulphates.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		
Digitalis Infusion of Foxglove.	Powd. Digitalis Leaves.	7 in 1000.	15 minutes.	2 to 4 fl. dr. (7 to 15 mls).		
Ergotæ Infusion of Ergot.	Freshly crushed Ergot.	1 in 20.	15 minutes.	1 to 2 fl. oz. (30 to 60 mls).		
Gentianæ Compositum Compound Infusion of Gen- tian.	Gentian Root, Bitter-Orange and Lemon Peel.	1 in 60.	15 minutes.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).		



INFUSA—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	DURATION OF PROCESS. REMARKS.	REMARKS.
<i>Infusum:</i> Krameria Infusion of Krameria. Infusion of Rhatany.	Bruised Rhatany Root.	1 in 20.	15 minutes.	$\frac{3}{4}$ to 1 fl. oz. (15 to 30 minls).
Quassia Infusion of Quassia.	Rasped Quassia Wood. Cold Distilled Water.	1 in 100.	15 minutes.	$\frac{3}{4}$ to 1 fl. oz. (15 to 30 minls).
Rhub. Infusion of Rhubarb.	Sliced Rhubarb Root.	1 in 20.	15 minutes.	$\frac{3}{4}$ to 1 fl. oz. (15 to 30 minls).
Rosa Acidum Acid Infusion of Rosea.	Red Rose Petals, diluted Sulphuric Acid.	1 in 40.	15 minutes.	$\frac{3}{4}$ to 1 fl. oz. (15 to 30 minls).
Scoparii Infusion of Broom.	Dried Broom Tops, bruised.	1 in 10.	15 minutes.	1 to 2 fl. oz. (30 to 60 minls).
Senega Infusion of Senega. Infusion of Seneka.	Powd. Senega Root.	1 in 20.	30 minutes.	$\frac{3}{4}$ to 1 fl. oz. (15 to 30 minls).
Senna Infusion of Senna.	Senna Leaves and sliced Ginger.	1 in 10.	15 minutes.	$\frac{3}{4}$ to 1 fl. oz. 2 fl. ozs.
Uva Ursi Infusion of Bearberry.	Bruised Bearberry Leaves.	1 in 20.	15 minutes.	$\frac{3}{4}$ to 1 fl. oz. (15 to 30 minls).

INJECTIONES HYPODERMICÆ. HYPODERMIC INJECTIONS.

Perfect solutions of medicinal substances, to be conveyed to the subcutaneous tissue, by means of a hypodermic syringe and needle.

Rapid absorption follows this mode of administration, through the lymphatics and capillary vessels, furnishing the advantage of the full action of the amount of drug used, without any possible changes, from intestinal secretions or processes.

STERILIZATION.—In order to avoid the formation of abscesses or sloughing at the seat of injection, both the solution and syringe should be sterile, and the needle free from rust or other foreign matter. It is not desired that solutions for hypodermic use shall be prepared as "stock solutions," but that they be freshly prepared, using distilled water that has been sterilized by recent thorough boiling; this is especially necessary with solutions of alkaloids, which soon develop *penicillium*, which often grows at the expense of the alkaloid. Although not officially enjoined, it is a wise precaution to render the appliances aseptic, and therefore the test-tube (or other vessel) in which the solution is to be made, as well as the bottle in which it is to be dispensed, should be rinsed with boiling distilled water, and dried in an oven at about 200 C. With a view to further protect these solutions, the pharmacopœia instructs the addition of small quantities of antiseptic agents, as salicylic acid and phenol.

INJECTIONES HYPODERMICÆ.

Five Official Hypodermic Injections.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	SUBCUTANEOUS DOSE.
<i>Injectio Hypodermica:</i> Apomorphinæ Hypodermic Injection of Apomorphine.	Apomorph. hydrochlor. dil. hydrochloric acid and sterilized water.	1 grain in 110 minims.	5 to 10 minims. (3 to 6 d.mils).
Cocainæ Hypo. Injection of Cocaine.	Cocaine hydrochlor., salicylic acid and sterilized water.	5 grains in 110 minims.	5 to 10 minims. (3 to 6 d.mils).
Ergotæ Hypo. Injection of Ergot.	Extract ergot, phenol and sterilized water.	33 grains in 110 minims.	5 to 10 minims. (3 to 6 d.mils).
Morphinæ Hypo. Injection Morphine.	Morphine tartrate and sterilized water.	2½ grs. in 110 minims.	5 to 10 minims. (3 to 6 d.mils).
Strychninæ Hypo. Injection Strychnine.	Strychnine hydrochloride and sterilized water.	¾ gr. in 110 minims.	5 to 10 minims. (3 to 6 d.mils).

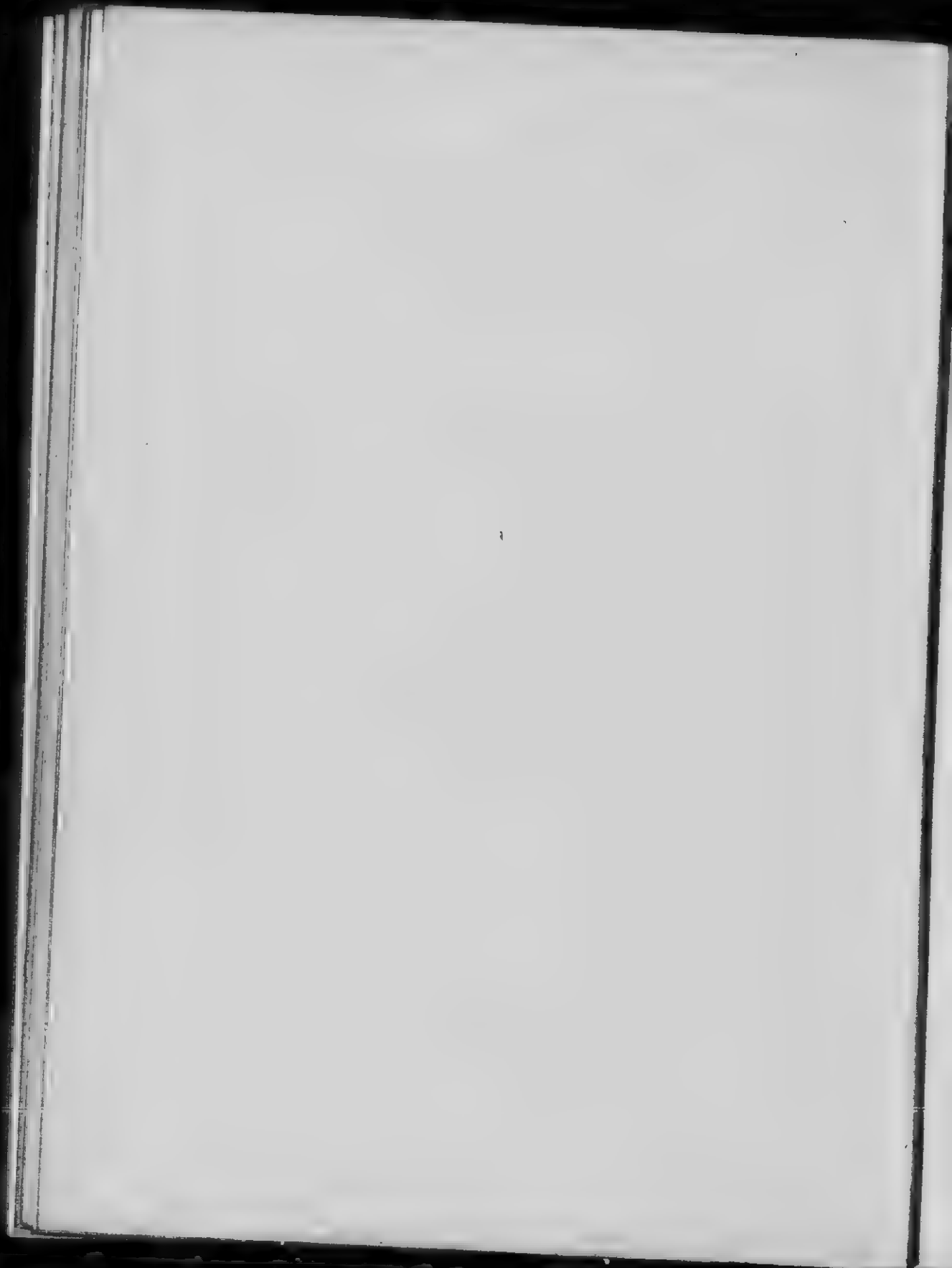
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LINIMENTA. LINIMENTS.

Liquid or semi-solid preparations, which are intended for external use by applying to the skin by the hand, accompanied by friction; or flannel or other fabric may be sprinkled with them and closely applied to the skin. Oils, soaps, and alcohol represent the vehicles through which medication is effected.

EXCEPTIONS: Linimenta Crotonis et Sinapis, owing to the nature of the chief medicating ingredient, are applied by means of a camel's-hair brush.

ALTERNATIVE PREPARATIONS: Arachis (Peanut) Oil or Sesame Oil may be employed instead of Olive Oil in preparing the Liniments of Ammonia, Lime and Camphor.

DISPENSING.—Inasmuch as the accidental internal administration of many of these preparations is likely to cause unpleasant or grave results, it is a commendable precaution to label them "Liniment. For External Use Only!" or "Poison!" However, when liniments are dispensed on the order of a medical practitioner, the latter warning label should be used *only when so ordered*.

LINIMENTA.

Fifteen Official Liniments.

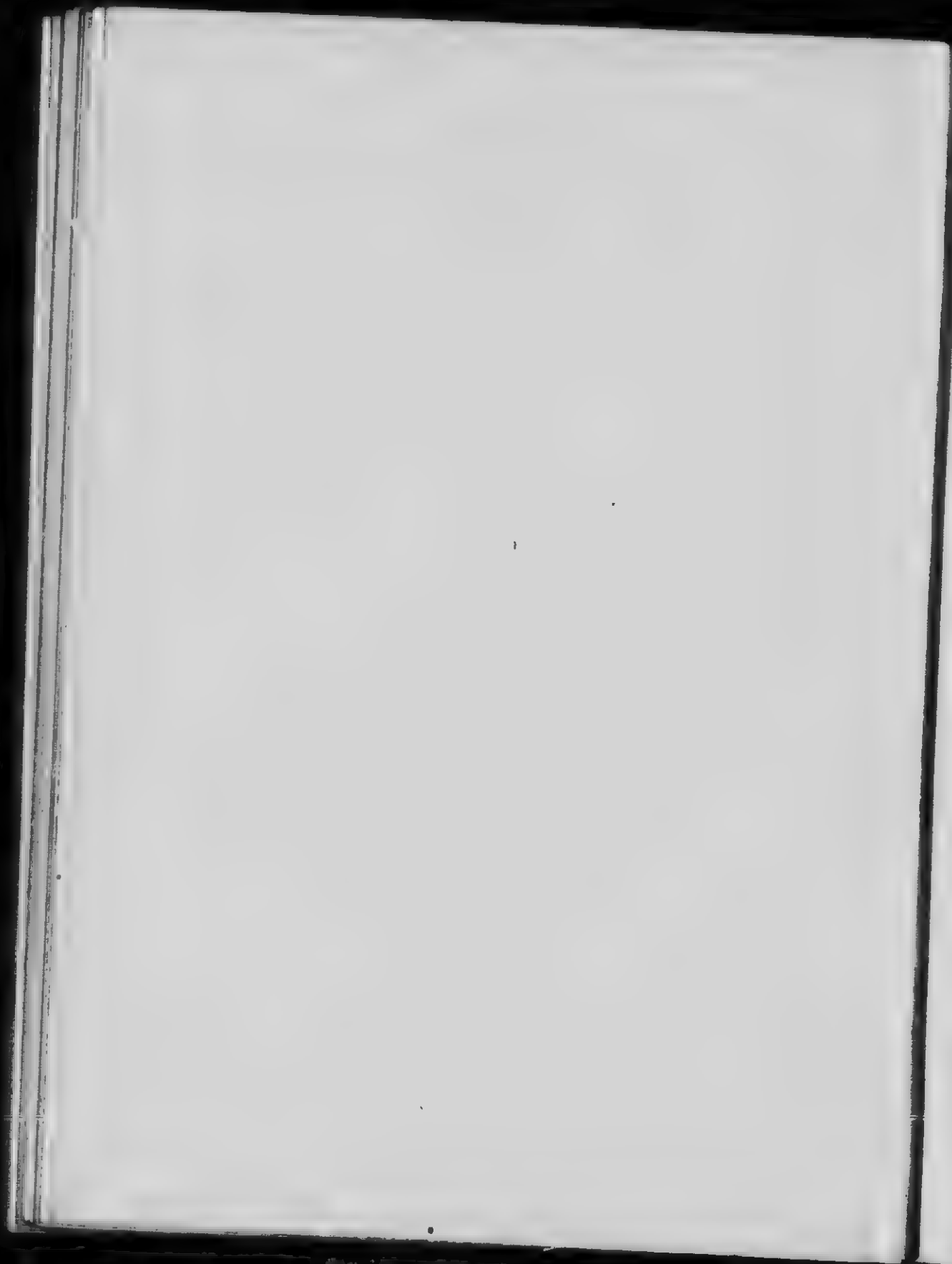
TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	PROCESS. PREPARATIONS.
I. LINIMENTS CONTAINING CAMPHOR.—TEN.			
<i>Linimentum:</i>			
Aconiti Liniment of Aconite.	Aconite Root, camphor, rect. spirit.	2% ether-soluble alkaloids.	Percolation and standardization.
Belladonnæ Liniment of Belladonnæ.	Liq. ext. belladonna, rectified spirit, camphor, water.	1 liq. ext. or 3/8 p.c. alkaloids.	Solution.
Camphoræ Liniment of Camphor. Camphorated Oil.	Camphor, olive oil.	1 in 5.	Solution. Lin. Chlorof. Lin. Hydrarg. Lin. Tereb. Ac.
Camph. Ammoniatum Ammoniated Lin. Camphor. Comp. Camphor Liniment.	Camphor, oil lavender, rect. spt., strong sol. ammonia.	2 Liq. Am. Fort., 1 camphor in 8.	Solution.
Chloroformi Liniment of Chloroform.	Chloroform and camphor liniment, equal volumes.	1 in 2.	Solution.

LINIMENTA—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	PROCESS. PREPARATIONS.
<i>Linimentum:</i>			
Hydrargyri Liniment of Mercury.	Oint. mercury, strong solution ammonia, camphor liniment.	1 mercury in 11.	Emulsification.
Saponis Liniment of Soap.	Soft soap, camphor, oil rosemary, rectified spirit, water.	1 in 9.	Maceration. Lin. Opii.
Sinapis Liniment of Mustard.	Volatile oil of mustard, camphor, castor oil, rectified spirit.	Oil mustard 1 in 30.	Solution.
Terebinthinae Liniment of Turpentine.	Soft soap, camphor, oil turpentine, water.	Oil turpentine 1 in 1 1/4.	Emulsification.
Terebinthinae Aceticum Liniment Turpentine and Acetic Acid.	Oil turpentine, cam- phor liniment, glacial acetic acid.	1 in 3 1/4.	Emulsification.

2. LINIMENTS CONTAINING NO CAMPHOR.—FIVE.

Ammoniae Liniment of Ammonia.	Solution ammonia, olive oil, almond oil.	1 in 4.	Emulsification
Calcis Liniment of Lime. Carroll Oil.	Solution lime and olive oil, equal volumes.	1 in 2.	Emulsification.
Crotonis Liniment of Croton Oil.	Oils croton and cajuput, rectified spirit.	1 in 6 1/4.	Solution.
Potas. Iodidi cum Sapone Liniment of Potassium Iodide with Soap.	Curd soap, KI, glyce- rin, oil lemon, water.	1 in 10.	Digestion and Trituration.
Opii Liniment of Opium. Anodyne Liniment.	Equal volumes of tinc- ture opium and soap liniment.	1 tinct. in 2. 1/4 p.c. mor- phine.	Solution.



LIQUORES MEDICATI. MEDICATED SOLUTIONS.

Aqueous solutions without sugar, in which the substances acted upon are wholly soluble in water. The preparations of this group are mainly divisible into two classes, viz.:—(1) Solutions of substances which cannot be conveniently prepared or stored, or are unstable in the pure and undiluted condition, (2) Solutions of potent remedies, of convenient dilution, in a form readily available for compounding, which obviate the necessity for weighing minute quantities, as strychnine, trinitroglycerin, mercuric chloride, adrenalin, atropine, etc.

EXCEPTIONS.—Absolute alcohol is used as a solvent in the preparation of Solution of Ethyl Nitrite; rectified spirit in preparing Solutions of Trinitrin and Coal Tar; acid normal saline solution in Hydrochloric Solution of Adrenalin; acetone in Blistering Liquid; sugar in Saccharated Solution of Lime.

USE OF ANTISEPTICS.—Many of the official Medicated Solutions contain sensitive constituents that are prone to decomposition, unless protected by the presence of an efficient antiseptic. In most cases where such protective measures are necessary, variable proportions of Rectified Spirit are employed, e.g., the Alkaloidal Solutions (excepting Solution Atropine Sulphate) contain 25 per cent. of rectified spirit, while Solution of Hamamelis has about 16 per cent.; chloroform is used in Hydrochloric Solution of Adrenalin; glycerin in Solution of Ethyl Nitrite; while Solution of Hydrogen Peroxide contains a minute quantity of acid to retard its decomposition.

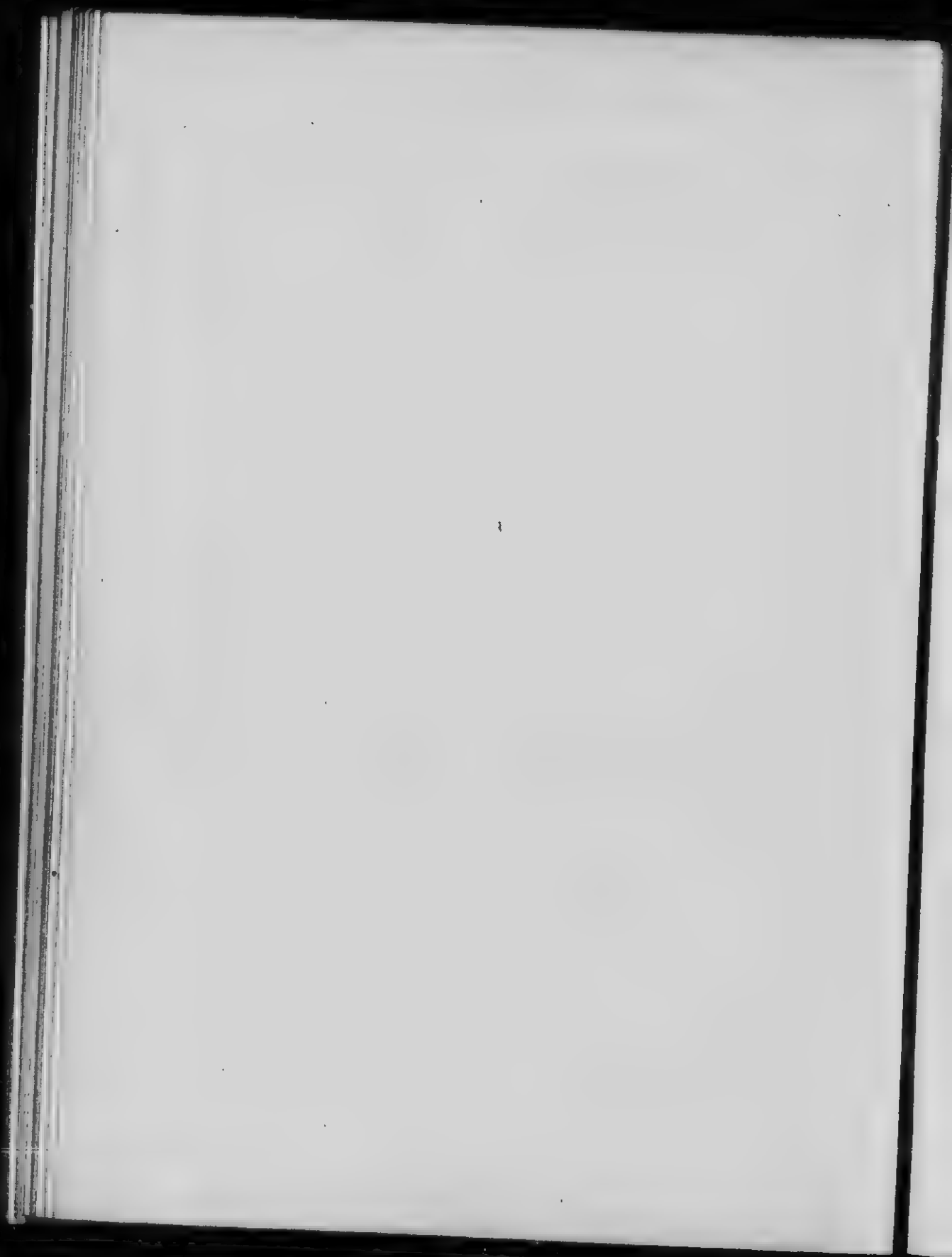
LIQUORES.

Forty-one Official Medicated Solutions.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH. SPECIFIC GRAVITY.	PROCESS.	DOSE. REMARKS.
Liquors:				
I. SOLUTIONS OF ALKALOIDAL SALTS.—FIVE.				
Atropinæ Sulphatis Solution of Atropine Sulphate. Morphinæ Acetatis Solution of Morphine Acetate.	Atropine sulphate and sterilized water.	1 grain in 110 min. (1 gram in 100 mils.).	Solution.	½ to 1 min. (3 to 6 c.mils.).
	Morphine acet., dil. acct. acid, rect. spirit and water.	1 grain in 110 min. (1 gram in 100 mils.).	Solution.	10 to 60 m. i. (6 to 36 d.s.).

LIQUORES—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH. SPECIFIC GRAVITY.	PROCESS.	DOSE. REMARKS.
<i>Liquors:</i>				
Morphinæ Hydrochloridi Sol. Morphine Hydrochloride. Sol. Morphine Hydrochlorate	Morph. hydrochlor., dil. HCl., rect. spirit and water.	1 grain in 110 min. (1 grain in 100 mils).	Solution.	10 to 60 min. (6 to 30 d. mils).
Morphinæ Tartratis Solution Morphine Tartrate.	Morphine tartrate, rect. spirit and water.	1 grain in 110 min. (1 grain in 100 mils).	Solution.	10 to 60 min. (6 to 30 d. mils).
Strychninæ Hydrochloridi Sol. Strychnine Hydrochloride. Liquor Strychnine Hall's Solution of Strychnine.	Strychnine hydrochloride, rect. spirit and water.	1 grain in 110 min. (1 grain in 100 mils).	Solution.	2 to 8 min. (12 to 30 c. mils).
II. SOLUTIONS OF IRON SALTS.—THREE.				
Ferri Perchloridi Solution of Ferric Chloride. Solution Perchloride of Iron. Solution Sesquichloride of Iron.	Strong solution perchloride of iron and water.	1 strong solution in 4. (same as Tincture).	Dilution.	5 to 15 min. (3 to 10 d. mils).
Ferri Perchloridi Fortis Strong Sol. Ferric Chloride. Strong Sol. Perchloride Iron. Strong Sol. Sesquichloride Iron.	Iron, hydrochloric and nitric acids and water.	Specific gravity, 1.49. 20 p.c. Iron (w/v). 20 grains of Iron in 110 minims.	Chemical Solution.	Stock Solution.
Ferri Persulphatis Solution of Ferric Sulphate. Solution Persulphate of Iron. Solution Tersulphate of Iron.	Ferrous Sulphate, sulphuric and nitric acids and water.	Specific gravity 1.441. 15 p.c. Iron (w/v).	Chemical Solution.	Stock Solution.
III. ARSENICAL SOLUTIONS.—FOUR.				
Arsenicalis Arsenical Solution. Liquor Potassii Arsenitis. Fowler's Solution.	Arsenious anhydride, potas. carb., comp. tinct. of laven- der and water.	Specific gravity 1.010. 1 grain As_2O_3 in 110 min., or 1 gram in 100 mils.	Solution.	2 to 8 min. (12 to 30 c. mils).

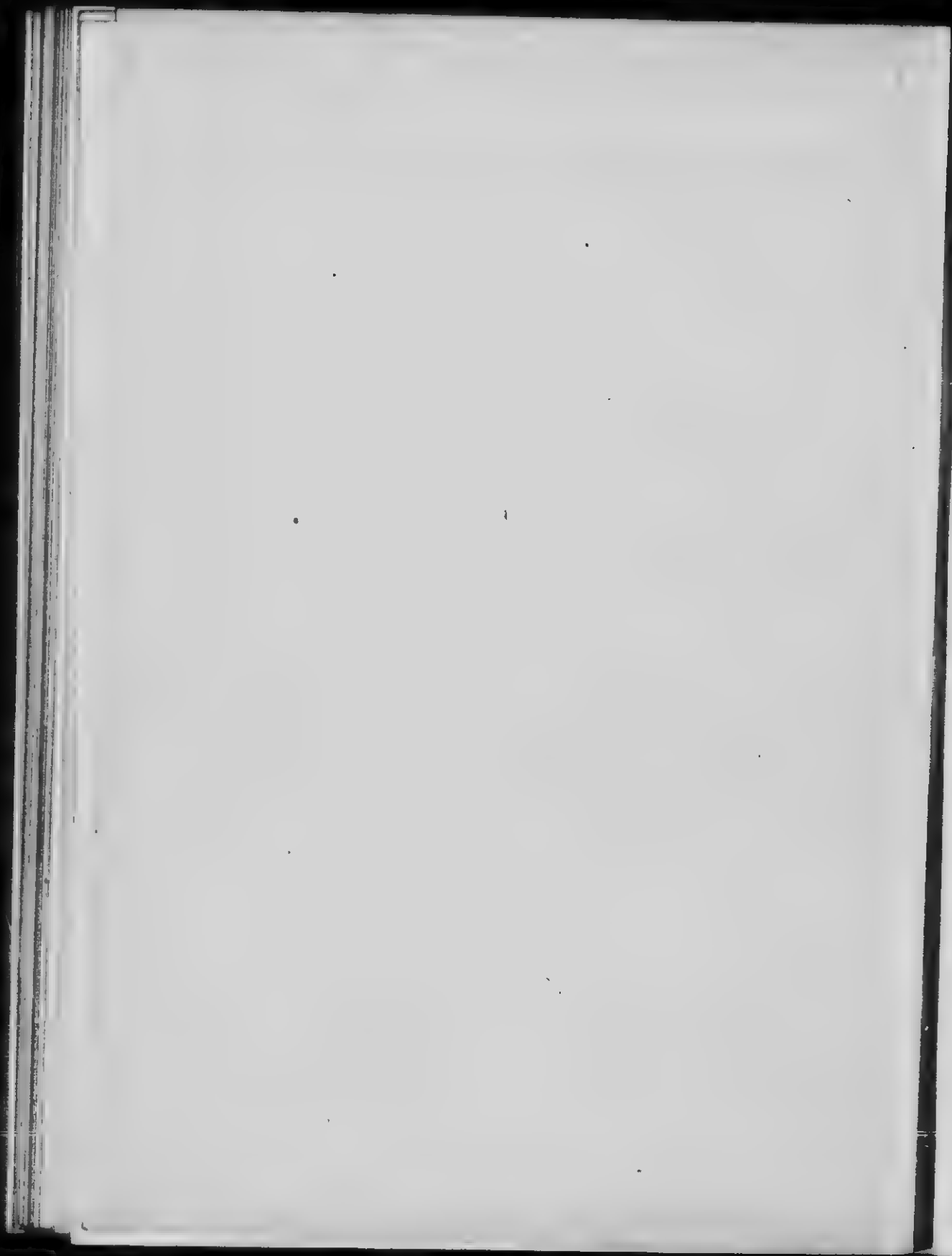


LIQUORES—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH. SPECIFIC GRAVITY.	PROCESS.	DOSE. REMARKS.
<i>Liquors:</i>				
Arsenici Hydrochloricus Hydrochloric Solution Arsenic. Solution of Arsenious Acid.	Arsenious anhydride, hydrochloric acid and water.	Specific gravity 1.010, 1 grain As_2O_3 in 110 min., or 1 gram in 100 mls.	Solution.	2 to 8 min. (12 to 30 c. mls).
Arsenii et Hydrargyri Iodidi Solution of Arsenious and Mercurous Iodides. Donovan's Solution.	Arsenium iodide, mercuric iodide and water.	1 grain each of AsI_3 and HgI_2 in 110 min.	Solution.	5 to 20 min. (3 to 12 d. mls).
Sodii Arsenatis Solution of Sodium Arsenate.	Anhydrous arsenate of sodium and water.	1 gr. anhydrous sodium arsenate in 110 min.	Solution.	2 to 8 min. (12 to 30 c. mls).
IV. DISINFECTING SOLUTIONS.—NDR.				
Calcis Chlorinatæ Solution of Chlorinated Lime. Solution of Chloride of Lime.	Chlorinated lime and water.	1 in 10. 2 p.c. available Cl.	Agitation and Colation.	Externally.
Cresol Saponatus Solution of Cresol with Soap. Compound Solution of Cresol. Saponaceous Solution of Cresol.	Cresol, castor oil, potassium hydroxide and water.	50 p.c. Cresol. $C_4H_9(CH_2)_7OH$.	Saponification.	Externally.
Formaldehydei Solution of Formaldehyde. Solution of Formic Aldehyde. Formalin. Formol.	Limited oxidation of methyl alcohol.	Sp. Gr. 1.080. 37 p.c. Formaldehyde. CH_2COH .	Chemical Solution.	Externally.
Formaldehydi Saponatus Sol. of Formaldehyde with Soap. Saponaceous Sol. Formaldehyde	Sol. formaldehyde, soft soap, rect. sp. and water.	20 p.c. of Solution of Formaldehyde.	Saponification.	Externally.
Hydrargyri Perchloridi Solution of Mercuric Chloride. Solution of Perchloride Mercury. Solution of Corrosive Sublimatæ.	Mercuric chloride and water.	1 in 1000, or about 1/18 gr. in 1 fl. dr.	Solution.	1/2 to 1 fl. dr. (2 to 4 mls).

LIQUORES—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH. SPECIFIC GRAVITY.	PROCESS.	DOSE. REMARKS.
<i>Liquors:</i>				
Hydrogenii Peroxidi Solution of Hydrogen Peroxide.	Barium peroxide, a dilute mineral acid and water.	9 to 11 vols. Oxygen, 3 p.c. by weight H_2O_2 .	Chemical Solution.	$\frac{1}{2}$ to 2 fl. dr. (2 to 8 mds).
Potassii Permanganatis Sol. of Potassium Permanganate. Weak Condy's Fluid.	Potassium permanganate and water.	1 p.c. $KMnO_4$, 1 grain in 110 min.	Solution.	2 to 4 fl. dr. (7 to 15 mds).
Sodæ Chlorinatæ Solution of Chlorinated Soda. Labarraque's Solution	Chlorinated lime, sodium carbonate and water.	Specific gravity 1.054, 2.5 p.c. available Cl.	Double Decomposition	10 to 20 min. (6 to 12 d.mds).
Zinci Chloridi Solution of Zinc Chloride. Burnett's Disinfecting Fluid.	Zinc, hydrochloric acid, solution of chlorine, zinc carbonate and water.	Specific gravity 1.530, About 57 p.c. $ZnCl_2$.	Chemical Solution.	Externally.
V. ALKALINE SOLUTIONS, CONTAINING ALKALINE HYDROXIDES OR CARBONATES.—SIX.				
Ammonias Solution of Ammonia.	Strong Solution, 1 vol. Distilled Water, 2 vols.	Specific gravity 0.950, 10 p.c. NH_3 by weight.	Solution.	Externally.
Ammonias Fortis Strong Solution of Ammonia.	Ammonium c. tribide, slaked lime and water.	Specific gravity 0.888, 32.5 p.c. NH_3 by weight.	Distillation and Solution.	Stock Sol.
Calcis Solution of Lime. Lime Water.	Washed slaked lime and distilled water.	$\frac{1}{10}$ p.c. Lime, CaO , About 1 gr. in 2 fl. ozs.	Chemical Solution.	1 to 4 fl. oz. (30 to 120 mds).
Calcis Saccharatus Saccharated Solution of Lime.	Washed slaked lime, sugar and distilled water.	Specific gravity 1.055, About 8 gra. in 1 fl. oz. or 2 p.c. Lime, CaO .	Chemical Solution.	15 to 60 min. (1 to 4 mds).
Magnesium Bicarbonatis Sol. Magnesium Bicarbonate. Fluid Magnesia.	Magnesium sulphate, sodium carbonate, water, carbonic oxide.	2 p.c. magnesium carb. or 10 gra. in 1 fl. oz.	Solution.	1 to 2 fl. oz. (30 to 60 mds).
Potassæ Solution of Potash.	Potassium hydroxide and water.	Specific gravity 1.045, 5 p.c. KOH w/v 5 gra. in 110 minima.	Double Decomposition.	10 to 30 min. (freely diluted).

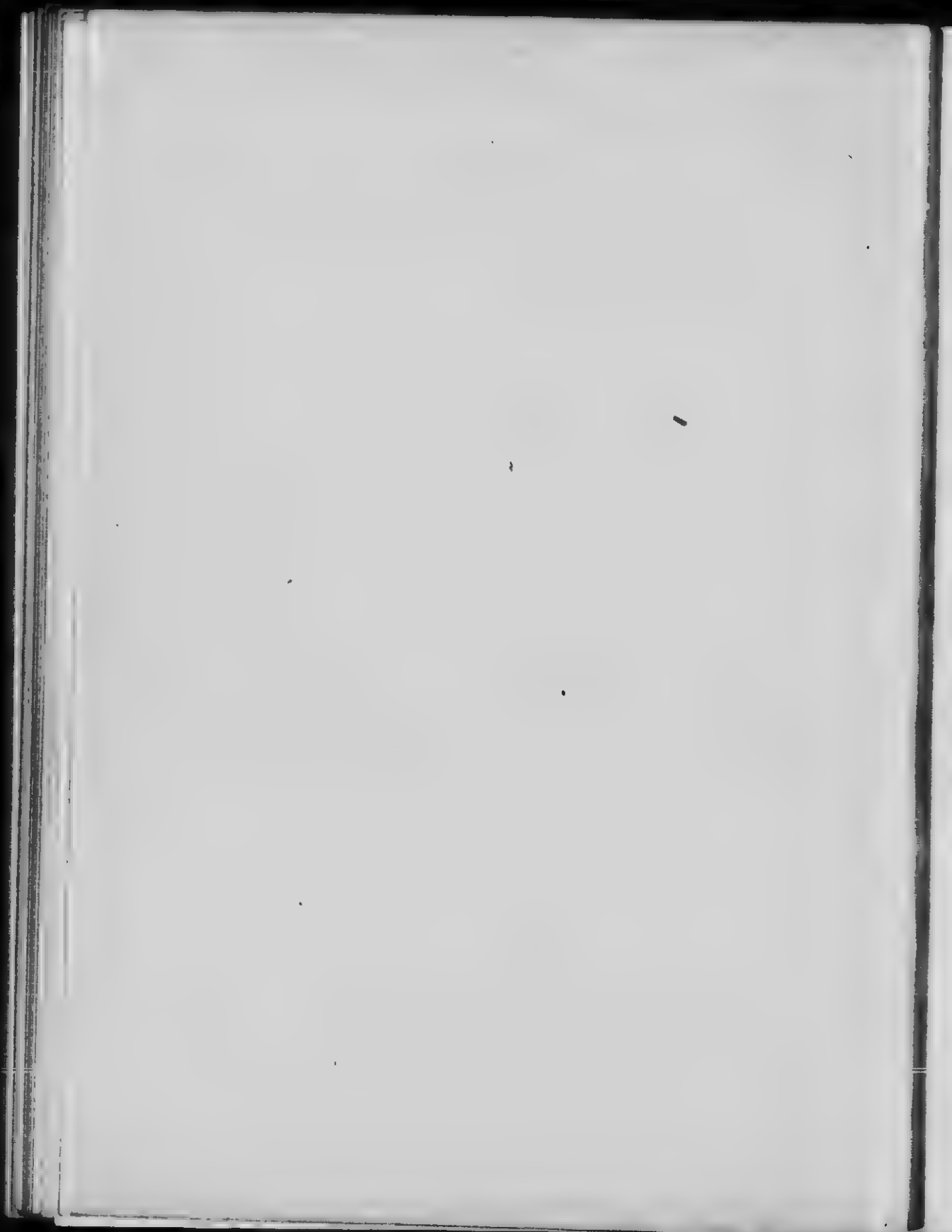


LIQUORES—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH. SPECIFIC GRAVITY.	PROCESS.	DOSE. REMARKS.
<i>Liquor:</i>				
VI. CAUSTIC SOLUTIONS.—Two.				
Acidi Chromici Solution of Chromic Acid.	Chromic anhydride and water.	25 p.c. CrO ₃ .	Solution.	Externally.
Hydrargyri Nitratiss Acidus Acid Sol. of Mercuric Nitrate. Acid Sol. Mercury Pernitrate.	Mercury, nitric acid and water.	Specific gravity about 2.00. About 50 per cent. Hg(NO ₃) ₂ .	Chemical Solution.	Externally.
VII. SOLUTIONS OF AMMONIUM SALTS.—Three.				
Ammonii Acetatis Sol. of Ammonium Acetate. Spirit of Mindererus.	Ammonium carbonate, acetic acid and distilled water.	4 grains ammonium acetate in 1 fl. dr.	Chemical Solution.	2 to 6 fl. drs. (8 to 24 mils).
Ammonii Citratiss Sol. of Ammonium Citrate.	Citric acid, ammon. carbonate and distilled water.	6½ grains ammonium citrate in 1 fl. dr.	Chemical Solution.	2 to 6 fl. drs. (8 to 24 mils).
Bismuthi et Ammonii Citratiss Sol. Bismuth and Ammon. Cit. Liquor Bismuthi. Solution of Bismuth.	BiONO ₃ , citric acid, solution of ammonia and distilled water.	10 p.c. bismuth cit., 1 fl. dr. represents 3 grs. Bi ₂ O ₃ .	Chemical Solution.	½ to 1 fl. dr. (2 to 4 mils).
VIII. BLISTERING SOLUTION.—One.				
Epispasticus Blistering Liquid. Unimentum of Cantharidin.	Cantharidin, castor oil, resin and acetone.	1 cantharidin in 250, or 0.4 p.c.	Solution.	Externally.
IX. MISCELLANEOUS SOLUTIONS.—Eight.				
Adrenalini Hydrochloricus Hydrochloric Sol. of Adrenalin.	Adrenalin, NaCl, dil. HCl, chlorof., and sterilized water.	1 in 1000. Acid normal saline solution, with ½ p.c. CHCl ₃ .	Solution.	10 to 30 min. (6 to 18 d. mils).
Ethyl Nitritiss Solution of Ethyl Nitrite. Solution of Nitrous Ether.	Sodium nitrite, dil. H ₂ SO ₄ , absolute alcohol and glycerin.	2.5 to 3 p.c. ethyl nitrite, or 6.5 to 7.8 vola. NO gas.	Chemical Solution.	20 to 60 min. (1 to 4 mils).

LIQUORES—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	SPECIFIC GRAVITY.	PROCESS.	DOSE. REMARKS.
<i>Liquor:</i> Hamamelidis Solution of Hamamelis. Solution of Witch Hazel.	Fresh hamamelis leaves, water, alcohol, 90 p.c.	1 in 1.	Distillation.	A medicated water.
Pancreatis Pancreatic Solution.	Pancreas of pig, rect. spt., glycerin, water.	1 in 4.	Digestion.	1 to 2 fl. dra. (4 to 8 mils). Externally.
Picis Carbonis Solution of Coal Tar. Liquor Carbonia.	Prepared coal tar, quillain bark, rect. spt.	1 coal-tar in 5.	Percolation and Digestion.	Stock Solution.
Plumbi Subacetatis Fortis Strong Sol. Lead Subacetate. Goulard's Extract. Extractum Saturni.	Lead acetate, lead oxide and distilled water.	Specific gravity 1.275. 23 p.c. $PbO(C_2H_3O_2)_2$.	Chemical Solution.	Externally.
Plumbi Subacetatis Dil. Diluted Sol. Lead Subacetate. Lead Water. Aqua Plumbi. Goulard Water. Goulard's Lotion.	Strong solution lead subac- etate and distilled water (recently boiled and cooled).	1 strong solution in 80, or 1.25 p.c. of strong solution (by volume).	Dilution.	Externally.
Trinitini Solution of Trinitrin. Solution of Nitroglycerin. Solution of Glonoin.	Trinitroglycerin and rectified spirit.	Specific gravity 0.840. 1 gr. in 110 min. or 1 gram in 100 mils.	Solution.	$\frac{1}{2}$ to 2 min. (3 to 12 c.mils).



LOTIONES. LOTIONS. (WASHES.)

Aqueous liquid preparations, for external application as washes, or by soaking lint or muslin with them and applying to the affected part.

Used not simply for the purpose of influencing external surfaces, but deep-lying tissues as well.

Two Official Lotions.

Lotio Hydrargyri Flava. Yellow Mercurial Lotion. Yellow Wash. Yellow Phagedænica Water. **INGREDIENTS.**—Mercuric chloride, 2 grs., solution of lime, 1 fl. oz. **PRODUCT.**—Yellow mercuric oxide (HgO) deposited in a solution of calcium chloride.



Lotio Hydrargyri Nigra. Black Mercurial Lotion. Black Wash. Black Phagedænica Water. **INGREDIENTS.**—Mercurous chloride 3 grs., glycerin and solution of lime to make 1 fl. oz. **PRODUCT.**—Black mercurous oxide (Hg_2O) temporarily suspended in solution of calcium chloride by means of glycerin.



MELLA. HONEYS.

Simple honeys, or mixtures of medicinal substances with honey.

Two Official Honeys.

Mel Depuratum. Purified Honey. Strained Honey. **Mel Despumat.** Clarified Honey. Honey melted on a water bath and strained while hot through flannel and, if necessary, adjusted to sp. gr. 1.36 by the addition of distilled water. Contains about 80 per cent. sugar, consisting of both dextrose and levulose.

Mel Boracis. Borax Honey. Contains borax, glycerin and purified honey. Strength, 1 borax in 10.

MISTURÆ. MIXTURES.

Mostly preparations of solid or liquid substances suspended in aqueous liquids by the aid of viscid agents.

This class represents compounds which cannot be included in any other distinct and characteristic pharmaceutical group:—Five are emulsions of oils (*Misturæ Amygdalæ, Ricini*), or of resins (*Mist. Ammoniaci, Ferri Comp., Guaiaci*), in which the oily or resinous substances are emulsified by means of an inherent emulsifacient (*Mist. Ammoniaci, Ferri Comp.*), or an added emulsifacient (*Misturæ Amygdalæ, Guaiaci, Olei Ricini*).

One is an aqueous suspension of an insoluble powder by means of the viscosity resulting from the addition of tragacanth (*Mist. Cretæ*), while *Mist. Ferri Comp.* is both an emulsion of resin (*myrrh*) and an aqueous suspension of insoluble ferrous carbonate (resulting from the interaction of ferrous sulphate and potassium carbonate, both in solution) in the viscid emulsion.

UNOFFICIAL MIXTURES.—The term *Mixture* also applies to a number of official preparations, not recognized in the B. P., but which are frequently compounded. They represent combinations of certain drugs in a particular form and proportion, whose employment is indicated by experience and sanctioned by tradition, e.g., *Mist. Glycyrrhizæ Comp.* (Brown Mixture), *Mist. Rhei et Sodæ*, *Mist. Ferri et Ammonii Acetatis* (Basham's Mixture), *Mist. Alba* (White Mixture), *Mist. Copaibæ* (Lafayette's Mixture), *Carminative Mixture* (Dalby's Carminative), etc.

Extemporaneously prepared liquid preparations made according to the order of the medical practitioner, when intended for internal use, are quite commonly termed "Mixtures," especially if intended for repeated administration. When to be taken at a single dose of one to four fluid ounces, the preparation is often termed "The Draught" (*Hausius*), or "The Potion" (*Potio*), while mixtures to be taken in doses of drops, are known as "The Drops" (*Guttae*).

CAUTION.—Nearly all of the official mixtures, from the very nature of their composition, are not permanent preparations, and hence should not be kept in stock in large quantities, but should be prepared either in small amounts, or extemporaneously.

MISTURÆ.

Seven Official Mixtures.

TITLES AND SYNONYMS.	INGREDIENTS AND REMARKS.	STRENGTH.	DOSE.
Ammoniaci Ammoniacum Mixture.	Ammoniacum, tolu syr. water. Emulsion.	1 in 33.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).
Amygdalæ Almond Mixture.	Comp. almond powder and water. Emulsion.	1 in 8.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).
Cratæ Chalk Mixture.	Ppd. chalk, powd. tragacanth, sugar, cinnamon water.	3 chalk in 100. 14 gra. in 1 fl. oz.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).
Ferri Composita Comp. Mixture of Iron. Griffith's Mixture.	Ferrous sulph., potas. carb., myrrh, rose water, spt. nutmeg, acacia, glucose. Emulsion.	3 gra. ferrous carb. in each fl. oz.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).
Gualiaci Gualacum Mixture.	Resin gualacum, sugar, powd. tragacanth, cinnamon water. Emulsion.	1 in 40. 12 gra. in each fl. oz.	$\frac{1}{2}$ to 1 fl. oz. (15 to 30 mls).
Olei Ricini Castor Oil Mixture. Emulsion Castor Oil.	Castor oil, cinnamon water, powd. acacia, orange-flower water. Emulsion.	3 fl. dra. in each fl. oz. 37 $\frac{1}{2}$ p.c. Oil.	1 to 2 fl. oss. (30 to 60 mls). as a draught.
Sennæ Composita Comp. Mixture of Senna. Black Draught.	MgSO ₄ , liq. ext. licorice, aromat. spt. ammonia, infusion senna, comp. tinct. of cardamoms.	1 os MgSO ₄ , 2 $\frac{1}{2}$ dr. senna in 4 fl. oss.	1 to 2 fl. oss. (30 to 60 mls). as a draught.

MUCILAGINES. MUCILAGES.

Viscid, adhesive, tenacious solutions, or opaque semi-solid jellies, obtained by macerating or digesting gums, or substances containing such constituents, with water. Gum is a frequent constituent of vegetable cell-contents, and some varieties form with water only a colloidal, translucent or opaque semi-solution.

USES.—Chiefly as vehicles, emulsifiants or excipients; also to suspend insoluble powders in mixtures and affix labels to bottles or other containers.

PRESERVATION.—Mucilages are comparatively short-lived, and hence should be prepared only in small quantities; they gradually acquire an acid reaction, an offensive odor, become thinner in consistence, and lose their emulsive properties. If made with *cold* water, and stored in small, well-filled, clean bottles, in a cool place, mucilage keeps fairly well.

When not required for medicinal uses, mucilage may be protected, or the above mentioned changes at least retarded, by preparing with chloroform water, or by the addition of alum, or the oils of cloves, sassafras or thyme, or the use of chloroform $\frac{1}{2}$ minim, or formaldehyde $\frac{1}{2}$ minim, or boric acid 1 grain, or benzoic acid $\frac{1}{2}$ grain, for each fluid ounce.

Three Official Mucilages.

Mucilago Acaciæ. Mucilage of Gum Acacia. Dissolve washed gum in cold water by agitation, and strain. Strength: about 1 in $2\frac{1}{2}$. Lime water is a preferable solvent, as it neutralizes the acidity commonly occurring in acacia, and promotes stability of product.

Mucilage of Acacia is incompatible with alcohol and sulphuric acid; borax, ferric salts or lead subacetate render it gelatinous.

Mucilago Gummi Indici. Mucilage of Indian Gum. Made like acacia mucilage, for use in India and Eastern Divisions of the Empire. Strength: 1 in 4.

Mucilago Tragacanthæ. Mucilage of Tragacanth. The powdered gum is diffused in a little rectified spirit (in which it is insoluble), and then quickly mixed with water and agitated. The intervention of the spirit prevents the formation of clotty lumps, which occur when the powder is added directly to water. Strength: 1 in 80, or about 6 grains of gum in a fluid ounce.

Tragacanth is inferior to acacia as an emulsifier for the fixed oils, but superior in most cases as a suspender of powders, because tragacanth imparts to water greater viscosity than an equal weight of acacia.

OLEA PINGUIA. FIXED OILS.

Solid or liquid inflammable substances, which are unctuous to the touch, and leave a permanent greasy stain on bibulous paper, which is unaffected by heat. If liquid at ordinary temperatures, they constitute the *fixed oils proper*, and if solid they are termed *fats*.

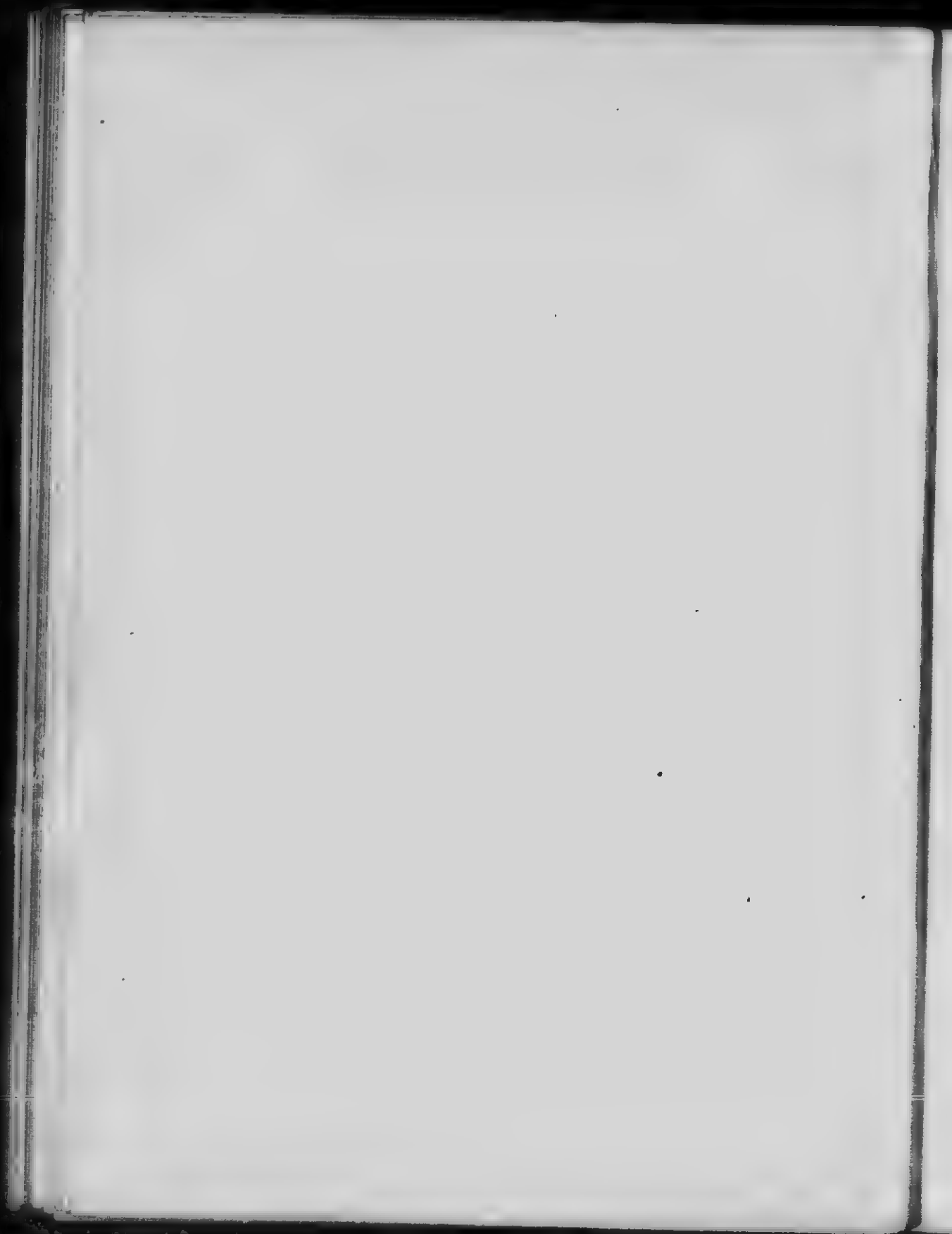
SOLVENTS.—They are insoluble in water, and sparingly soluble in cold alcohol (*excepting Croton and Castor Oils*, which are quite soluble in alcohol), but readily dissolved by ether, chloroform, carbon disulphide, benzol, benzine and volatile oils.

COMPOSITION.—Mixtures of two or more fatty principles, having different fusing and congealing points, and which may be separated from each other by fractional refrigeration. These fatty principles are the glyceryl esters of the higher members of the fatty acids; Glyceryl, C_3H_5 , being the hydrocarbon residue of the trihydric alcohol glycerin, $C_3H_5(OH)_3$. In most cases they are composed of at least three proximate principles: Olein, $C_3H_5(C_{18}H_{35}O_2)_3$, Palmitin, $C_3H_5(C_{16}H_{31}O_2)_3$, and Stearin, $C_3H_5(C_{18}H_{37}O_2)_3$, which are respectively, *oleate*, *palmitate* and *stearate of glyceryl*. Olein is a liquid, while palmitin and stearin are solids.

Waxes (spermaceti, beeswax, etc.) are chiefly fatty acid esters of monohydric alcohols, while the wax-like substance known as Paraffinum Durum or paraffin wax, is a mixture of hydrocarbons of the saturated paraffin series, having high molecular weights; Paraffinum Molle is of similar composition, but the molecular weights of its components are lower, with corresponding reduction of its melting point.

PREPARATION.—The fats are obtained from the sources yielding them:—by Expression, either hot (Cacao Butter) or cold (Olive Oil); or by Boiling with Water, the oil separating and rising as a superimposed layer; or by Fusion (Lard, Suet); or by Extraction with a suitable volatile solvent and the subsequent removal of the solvent by evaporation or distillation.

SAPONIFICATION.—When treated with hot alkalis, or heated with metallic oxides in the presence of water, or acted upon by superheated steam, the fats are saponified, the products being metallic salts of the fatty acids. The alkalis furnish *soluble* soaps, while the alkali-earths and metallic oxides yield *insoluble* soaps (lead plaster, zinc oleate, mercuric oleate, etc.). Soda soaps are hard (Sapo Durus), while potash soaps are soft (Sapo Mollis *vel* Viridis).



TESTING.—The methods of examination adopted in determining the identity, purity or commercial value of the fixed oils, fats and waxes, are somewhat numerous, owing to variation in composition, which renders sophistication comparatively easy and the detection of adulterations correspondingly difficult. The physical properties, specific gravity, solubility in various solvents, and melting and congealing points are of great importance, and chemical tests are also commonly employed.

The following factors, which furnish valuable data in determining the purity of, and detecting adulterations in these substances, are now given official recognition:—

The Acid Value of a fixed oil, fat or wax, refers to the number of *mils* of potassium hydroxide required to neutralize the free acid in *one gram* of the substance, thus, the acid number of Almond Oil should exceed 6, Linseed Oil 3, Cod Liver Oil 2.5, etc.

The Iodine Value of a fixed oil or fat, refers to the proportional weight of iodine absorbed by 100 parts by weight of the substance under the conditions specified, thus, the iodine number of Sesame Oil is 103 to 114, Castor Oil, 83 to 90, Linseed Oil, 170 or higher.

The Saponification Value of a fixed oil, wax or resin, refers to the number of *mils* of potassium hydroxide required for the complete saponification of *one gram* of the substance, thus the saponification number of Olive Oil is 188 to 197, Castor Oil, 177 to 187, etc.

The Refractive Index of oil may be determined in a suitable refractometer as nearly as possible at the temperature specified, thus the refractive indices of the following at 40° are: Cacao Butter 1.4565-1.4575, Castor Oil 1.4695-1.4730, Olive Oil 1.4605-1.4635.

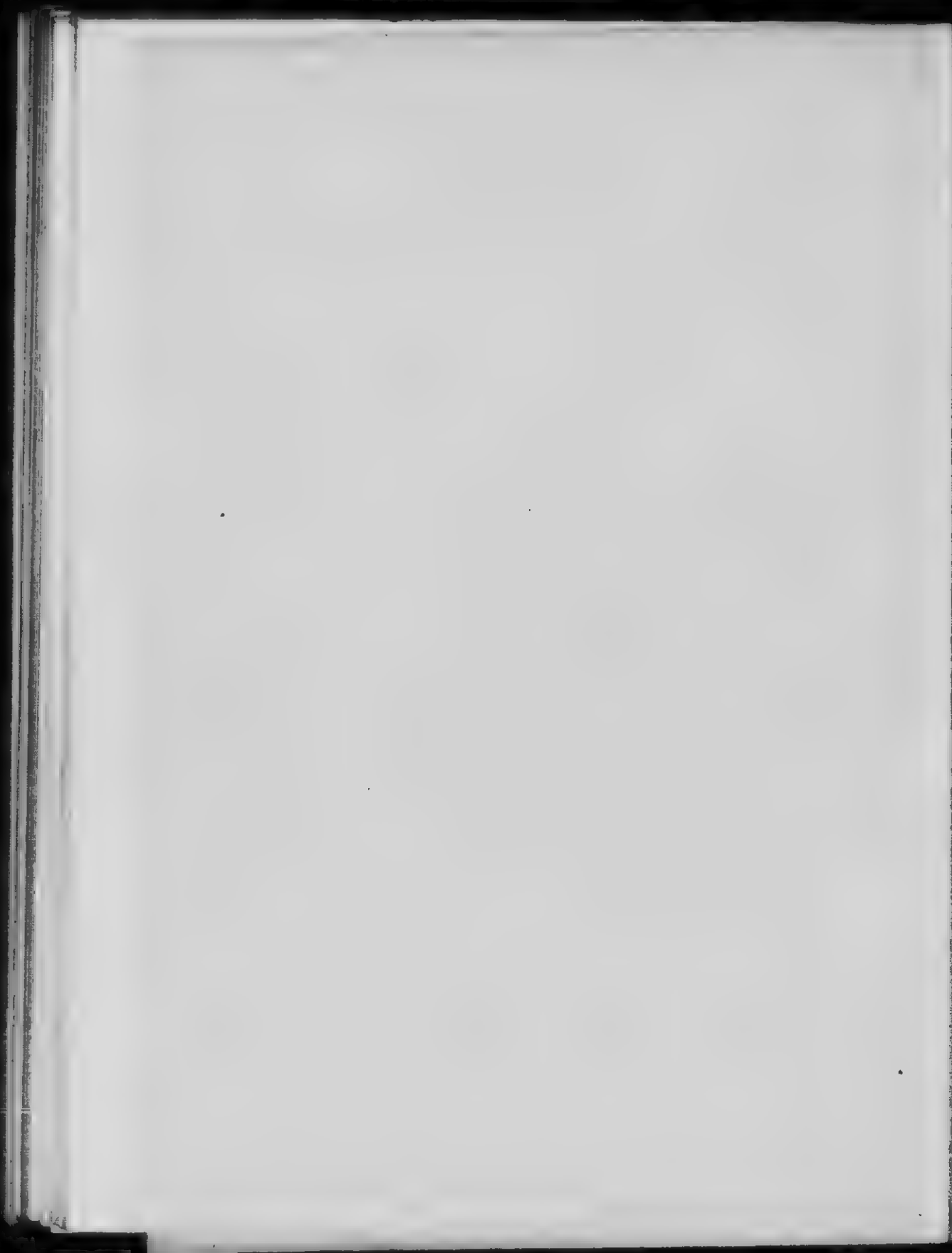
ALTERNATIVE PREPARATIONS.—Arachis (Pea-nut) Oil or Sesame Oil may be employed instead of Olive Oil in preparing the official Liniments, Plasters, Ointments, and Soaps, for which Olive Oil is directed to be used in India, and in the Eastern, African, Australasian, and North American Divisions of the Empire.

PRESERVATION.—On exposure to air, the fats decompose slowly and acquire an acrid, disagreeable odor and taste, and an acid reaction; they are then said to be *rancid* and are unfit for either internal administration or outward application. To avoid, or at least to retard these changes, they should be kept in a cool, dry place, protected from light, and in air-tight receptacles.

OLEA PINGUIA.

Twenty Official Fixed Oils and Fats (including two Medicated Oils).

TITLES AND SYNONYMS.	SOURCES. INGREDIENTS. REMARKS.	PROCESS. SPEC. GRAVITY.	DOSE. REMARKS.
TRUE FIXED OILS. LIQUID AT ORDINARY TEMPERATURES.			
<i>Oleum:</i>			
Amygdalæ Almond Oil. Expressed Oil of Almond.	Bitter or Sweet Almond (<i>Prunus Amygdalus</i> var. <i>amara</i> vel <i>dulcis</i>).	Expression. 0.905 to 0.920.	<i>Ad libitum.</i>
Arachis Arachis Oil. Earth-nut Oil. Ground-nut Oil. Pea-nut Oil.	Pea-nuts, the seeds of <i>Arachis hypogæa</i> .	Expression. 0.916 to 0.921.	<i>Ad libitum.</i>
Chaulmoogra Chaulmoogra Oil. Gynocardia Oil.	Gynocardia Seeds. (<i>Taraktogenos Kurnis</i>).	Expression. 0.940 Liquid or semi-solid.	5 to 10 min. increase to 1 fluidrachm.
Crotonis Croton Oil. Oleum Tiglii.	Croton Seeds (<i>Croton Tiglium</i>).	Expression. 0.940 to 0.960.	¼ to 1 min. (3 to 6 c. mls).
Lini Linseed Oil. Flaxseed Oil.	Linseed (<i>Linum usitatissimum</i>).	Cold Express. 0.930 to 0.940.	
Morrhuae Cod Liver Oil. Oleum Jecoris Aselli.	Fresh Liver of Cod (<i>Gadus morhua</i>).	Hot Extraction Refrigeration Expression. 0.920 to 0.930.	1 to 4 fl. dr. (4 to 16 mls).
Olivæ Olive Oil. Sweet Oil. Salad Oil.	Ripe Olive Fruit (<i>Olea europæa</i>).	Expression. 0.915 to 0.918.	<i>Ad libitum.</i>
Paraffini Paraffinum Liquidum. Liquid Paraffin. Paraffin Oil.	Liquid hydrocarbons from petroleum.	Fractional Distillation. 0.860 to 0.890.	1 to 4 fl. dr. (4 to 16 mls). Non-saponifiable
Phosphoratum Phosphorated Oil.	Phosphorus 1%, purified olive oil and oil lemon.	Digestion.	1 to 5 min. (6 to 30 c. mls).
Ricini Castor Oil.	Castor seed (<i>Ricinus communis</i>).	Expression. 0.958 to 0.970.	1 to 8 fl. dr. (4 to 30 mls).
Sesami Sesame Oil. Benne Oil.	Sesame seeds. (<i>Sesamum indicum</i>).	Expression. 0.921 to 0.924.	<i>Ad libitum.</i>
Linimentum Camphoræ Camphor Liniment. Camphorated Oil.	Camphor dissolved in Olive Oil. 1 in 5.	Solution.	Externally.
SOLID FATS AND WAXES (FOUR WAXES).			
Adeps Benzoatus Benzoated lard.	Powdered Benzoin (3). Purified Lard (100).	Digestion and Colation.	Ointment Base.



OLEA PINGUIA—Continued.

TITLES AND SYNONYMS.	SOURCES. INGREDIENTS. REMARKS.	STRENGTH.	DOSE. REMARKS.
<i>Fleum:</i> Adeps Præparatus Purified Lard. <i>Axungia Porcina.</i>	Abdominal fat of Hog (<i>Sus scrofa</i>).	Fusion and Expression. M.P. 38° C. (100° F.).	Ointment Base.
Adeps Lanæ Wool Fat. Anhydrous Lanolin.	Purified fat of sheep's wool.	Maceration with benzine or ether.	Ointments. M.P. 40° C. (104° F.).
Adeps Lanæ Hydroblus Hydrous Wool-fat.	Wool-Fat (7). Water (3).	Fusion and Trituration.	Ointment Base.
Cera Alba White Wax. White Beeswax.	Yellow beeswax, bleached.	Exposure to moisture, air and sunlight.	M.P. 61-64° C. (142-147° F.).
Cera Flava Yellow Wax. Yellow Beeswax.	Sp. gr. 0.958 to 0.970. Honeycomb of the Hive Bee, <i>Apis mellifera</i> .	Fusion and Expression.	M.P. 61-64° C. (142-147° F.).
Cetaceum Spermaceti.	Sp. gr. 0.950 to 0.960. Head of Sperm Whale (<i>Physeter macrocephalus</i>). A wax.	Expression and Purification.	Ointments. M.P. 48° C. (118° F.).
Oleum Theobromatis Oil of Theobroma. Cacao Butter.	Cacao Seed (<i>Theobroma Cacao</i>). Softens at 23° C.	Hot Express. M.P. 30° C. (86° F.).	Ointment Base. Suppositories.
Paraffinum Durum Hard Paraffin. Paraffin Wax.	Hard hydrocarbons of paraffin series. Obtained from shale.	Distillation, Refrigeration, Purification.	Ointments. M.P. 50°-60° C. Non-saponifiable
Paraffinum Molle Soft Paraffin. Petrolatum. Petroleum Jelly.	Semi-solid hydrocarbons of paraffin series. Obtained from petroleum.	Purification.	Ointments. M.P. 42° C. Non-saponifiable
Sevum Benzoatum Benzoated Suet.	Powdered Benzoin (3). Prepared Suet (100).	Digestion and Colation.	Ointment Base. M.P. 33-46° C.
Sevum Præparatum Prepared Suet.	Abdominal fat of sheep. (<i>Ovis aries</i>).	Fusion and Expression.	Ointment Base. M.P. 33-46° C.

OLEA VOLATILIA. VOLATILE OILS. (ESSENTIAL OILS).

Volatile, odorous, liquid proximate principles, found naturally in portions of plants, or formed by the action of peculiar ferments upon certain plant constituents. They represent by-products of the elaboration of the food material of the plant.

PROPERTIES.—Slightly soluble in water, freely soluble in alcohol, ether, chloroform, carbon disulphide, benzol, fixed oils, etc.; when dropped upon paper they leave a translucent stain, which disappears on heating.

PREPARATION.—Obtained by simple distillation of oleo-resins (Oil Copaiba, etc.); distillation of the plant-substances with water (Oil Peppermint, etc.); expression (Oil Lemon, etc.); or by extraction with a suitable liquid solvent or an odorless fat, and subsequent separation.

COMPOSITION.—They are mainly terpenes, simple hydrocarbons (Oil Turpentine); some are oxygenated (Ol. Cinnam.); some are sulphurated, containing sulphur (Ol. Sinapis); some are nitrogenated, containing nitrogen (Ol. Amygdalæ Amar.).

The Oxygenated Volatile Oils contain at least two proximate principles, differing in boiling and congealing points, chemical composition, etc. 1. Terpenes (mostly $C_{10}H_{16}$ or $C_{15}H_{24}$), liquid at ordinary temperatures, and have low boiling points. 2. Stearoptenes, or camphors, as they are often termed, are oxides or hydroxides of terpenes; they are crystalline solids at temperatures slightly below the ordinary, have higher boiling points, and are held in solution in the terpenes at ordinary temperatures; they are esters, alcohols, aldehydes, ketones, phenol derivatives, etc.

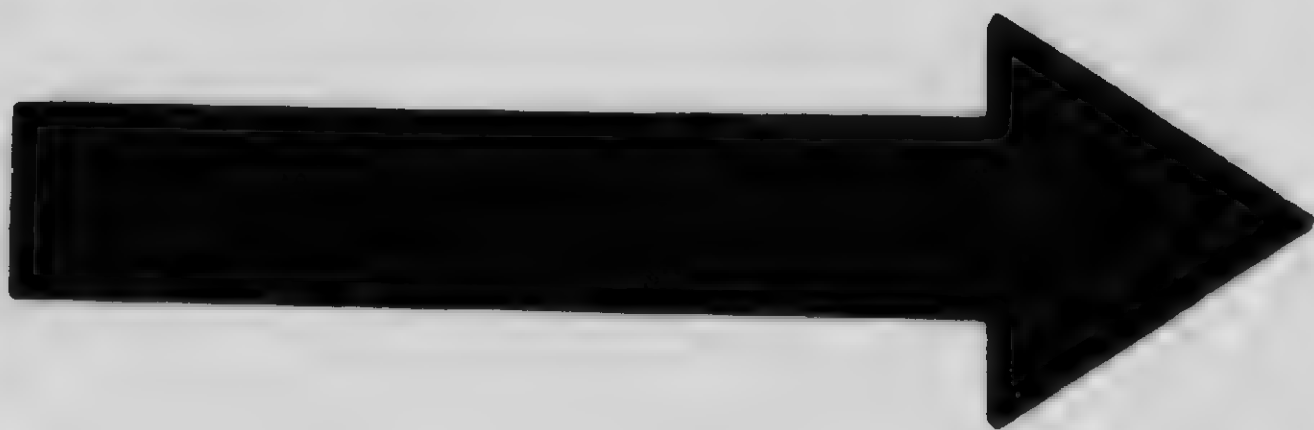
METHODS OF EXAMINATION.—The Terpenes have little value as flavouring or odoriferous bodies and act as diluting agents of the more valuable Stearoptenes which usually represent the flavour-bearing constituents, for example, Lemon Oil can be separated by fractional distillation (under diminished pressure) into about ninety per cent. of terpene (limonene) and ten per cent. of aldehydes (citral and citronellal) to which its flavour is due.

As the commercial and medicinal value of volatile oils depend chiefly on the non-terpene (terpeneless) portion, hence various processes commonly employed in organic chemistry have been adapted for the determination of the percentage of the more important bodies present.

Esters are determined by saponification with potash and from the weight of potassium hydroxide required, the equivalent amount of ester can be calculated; the esters of the following oils are so determined, viz.: Siberian Fir (Pine), Lavender, Wintergreen, Rosemary, Peppermint and others.

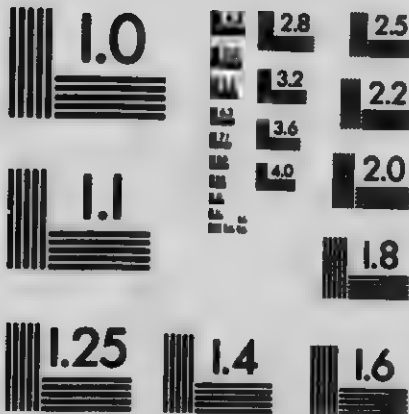
Alcohols are determined by acetylation, *i.e.*, the utilization of the well known fact that substances containing a hydroxyl group react with acetic anhydride to form an acetic ester of the hydrocarbon radical of the alcohol; Santalol (in Sandal Wood), Menthol (in Peppermint), Borneol (in Rosemary) and other alcohols are thus determined.

Aldehydes are determined by taking advantage of the well-known property which aldehydes have of forming definite water-soluble com-



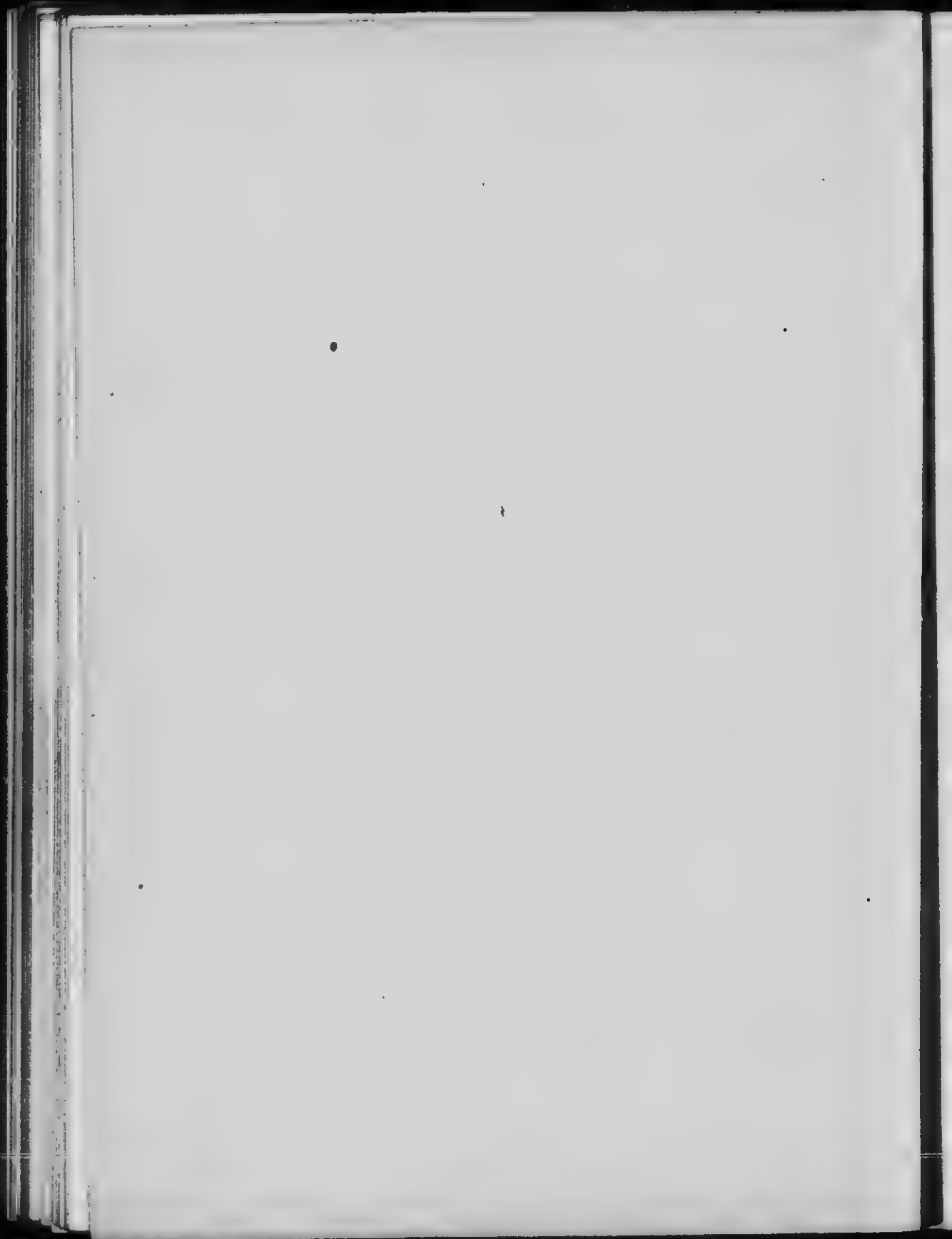
MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



APPLIED IMAGE Inc

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pounds with sodium bisulphite. The following oils are thus assayed: cinnamon, lemon, lemon grass, etc.

Phenols are determined by utilizing the property which phenols possess of combining with potassium hydroxide to form water-soluble compounds, and determining the amount of "non-phenol" left undissolved; the following are thus estimated, Thymol, Eugenol (Cloves).

PHYSICAL PROPERTIES.—These must also be carefully observed in proving the identity, purity, or presence or absence of adulterations.

Though chemical means are commonly employed, a combination of both physical and chemical methods will often enable the detection of gross adulterations; hence specific gravity, boiling temperature, congealing-point, solubility in alcohol, refractive index and optical rotation, become important factors in testing volatile oils.

Optical Rotation refers to the angle through which the plane of polarisation is turned when a column of oil at 20° C. in a 100 millimeter tube is examined by polarized sodium light, thus the optical rotation of *Ol. Anethi* is +70° to +80°, *Ol. Cinnam.* -0.5° to -1°, *Ol. Eucalypti* -10° to +10°, etc.

ADULTERATIONS.—By adulteration is to be understood, not only the addition of inferior or cheaper substances (alcohol or oil of turpentine), but also the withdrawal of some of the more valuable constituents, *e.g.*, menthol from oil of peppermint, citral from oil of lemon, etc.

Changes in specific gravity may indicate the addition of turpentine to oil of peppermint, or the removal of menthol, but by chemical means the exact amount of menthol in the oil can be ascertained. However, skilful adulteration often makes detection absolutely impossible, *eg.*, no one can detect by chemical or other means, the presence of pure, artificial methyl salicylate in oil of birch or wintergreen, or of pure, artificial benzaldehyde in oil of bitter almonds, or the addition of citral from lemon-grass oil to washed lemon oil.

PRESERVATION.—Being readily affected by the action of air, heat and light, in many cases becoming resinified, in others developing a terebinthinate odor and taste, and a viscid consistence, the volatile oils should be kept in a cool place, in small, well-filled, stoppered amber-glass bottles.

Deterioration may often be prevented, or at least considerably retarded, by the addition of about 5 p.c. of rectified spirit.

DOSAGE.—With but few exceptions, the official dose is $\frac{1}{2}$ to 3 minims, (3 to 18 *c.mils.*).

OLEA VOLATILIA.

Twenty-eight Official Volatile Oils (including Methyl Salicylate).

TITLES AND SYNONYMS.	SOURCES.	PROCESS. SPEC. GRAVITY.	DOSE. REMARKS.
<i>Oleum:</i>			
Abietis Oil of Siberian Fir. Oil of Pine.	Siberian Fir leaves. (<i>Abies Sibirica</i>).	Distillation. 0.900 to 0.920.	Local Application. 30-40% esters. as Bornylacetate.
Ajowan Ajowan Oil. Ptychotis Oil.	Ajowan fruit (<i>Carum copticum</i>).	Distillation. 0.910 to 0.930.	$\frac{1}{2}$ to 3 minims. 40% Thymol.
Anethi Oil of Dill.	Dill fruit (<i>Pencedar</i> an <i>graveolens</i>).	Distillation. 0.900 to 0.915.	$\frac{1}{2}$ to 3 minims.
Anisi Oil of Anise.	Anise fruit (<i>Pimpinella</i> <i>Anisum</i>), or star- anise fruit (<i>Illicium</i> <i>verum</i>).	Distillation. 0.975 to 0.990 20° C. (68° F.).	$\frac{1}{2}$ to 3 minims.
Anthemidis Oil of Chamomile.	Chamomile flowers (<i>Anthemis nobilis</i>).	Distillation. 0.905 to 0.915.	$\frac{1}{2}$ to 3 minims.
Cadinum Oil of Cade. Juniper Tar Oil.	Wood of <i>Juniperus</i> <i>Oxycedrus</i> .	Destruct. distil. About 0.990.	Externally.
Cajuputi Oil of Cajuput.	Cajuput leaves (<i>Mal- aleuca Leucadendron</i>).	Distillation. 0.910 to 0.930.	$\frac{1}{2}$ to 3 minims. 45% Cineol.
Carui Oil of Caraway.	Caraway fruit (<i>Carum</i> <i>Carvi</i>).	Distillation. 0.910 to 0.920.	$\frac{1}{2}$ to 3 minims.
Caryophylli Oil of Cloves.	Cloves (<i>Eugenia cary- ophyllata</i>).	Distillation. 1.047 to 1.065.	$\frac{1}{2}$ to 3 minims. 85% Eugenol.
Cinnamomi Oil of Cinnamon.	Cinnamon Bark (<i>Cin- namomum zeylanicum</i>).	Distillation. 1.000 to 1.030.	$\frac{1}{2}$ to 3 minims. 55-65% Cinnamic Aldehyde.
Copaibæ Oil of Copaiba.	Oleoresin Copaiba.	Distillation. 0.900 to 0.910.	5 to 20 minims. (3 to 12 d.mils).
Coriandri Oil of Coriander.	Coriander fruit (<i>Cori- andrum sativum</i>).	Distillation. 0.870 to 0.885.	$\frac{1}{2}$ to 3 minims.
Cubebæ Oil of Cubeb.	Cubeb fruit (<i>Piper</i> <i>Cubeba</i>).	Distillation. 0.910 to 0.930.	5 to 20 minims. (3 to 12 d.mils).
Eucalypti Oil of Eucalyptus.	Eucalyptus leaves (<i>Eucalyptus Globu- lus</i>), and species.	Distillation. 0.910 to 0.930.	$\frac{1}{2}$ to 3 minims. 55% Cineol.
Gaultheriæ Oil of Gaultheria. Oil of Wintergreen. Oil of Sweet Birch.	Wintergreen leaves. (<i>Gaultheria procum- bens</i>) or Sweet Birch bark, (<i>Betula lenta</i>).	Distillation. 1.18 to 1.187.	5 to 15 minims. (3 to 10 d.mils). 99% Esters, as methyl salicylate.
Graminis Citrati Oil of Lemon-Grass. Indian Oil of Verbena.	Lemon-Grass plant. (<i>Cymbopogon citratus</i> <i>vel flexuosus</i>).	Distillation. 0.880 to 0.905.	$\frac{1}{2}$ to 3 minims. 70% Aldehydes.
Juniperi Oil of Juniper.	Juniper fruit (<i>Juni- perus communis</i>).	Distillation. 0.862 to 0.890.	$\frac{1}{2}$ to 3 minims.

OLEA VOLATILIA—Continued.

TITLES AND SYNONYMS.	SOURCES.	PROCESS. SPEC. GRAVITY.	DOSE. REMARKS.
<i>Oleum:</i> Lavandulæ Oil of Lavender.	Lavender flowers (<i>Lavandula vera</i>).	Distillation. 0.883 to 0.900.	½ to 3 minims. 9% Esters (Eng.). 30% (Foreign).
Limonis Oil of Lemon.	Lemon peel (<i>Citrus medica</i>).	Mechanically. 0.857 to 0.860.	½ to 3 minims. 4% Aldehydes as Citral.
Menthæ Piperitæ Oil of Peppermint.	Fresh Peppermint herb (<i>Mentha Piperita</i>).	Distillation. 0.900 to 0.920.	½ to 3 minims. 50% Menthol, also 5% Esters.
Menthæ Viridis Oil of Spearmint.	Fresh Spearmint herb (<i>Mentha viridis</i> vel <i>crispa</i>).	Distillation. 0.925 to 0.940.	½ to 3 minims.
Methyl Salicylatiæ Methyl Salicylate. Synthetic Oil Wint'g'n. $C_6H_4(OH)COOCH_3$.	Reaction of Methyl Alcohol and Salicylic Acid. A synthetic substance.	Chemical Means. 1.185 to 1.192.	5 to 15 minims. (3 to 10 d.mils).
Myristicæ Oil of Nutmeg.	Nutmeg seed (<i>Myristica fragrans</i>).	Distillation. 0.870 to 0.925.	½ to 3 minims.
Rosæ Oil of Rose. Otto of Rose.	Rose flowers (<i>Rosa damascena</i>).	Distillation. 0.854 to 0.862. 30° C. (86° F.).	Flavouring agent.
Rosmarini Oil of Rosemary. Oleum Anthos.	Rosemary herb (<i>Rosmarinus officinalis</i>).	Distillation. 0.895 to 0.920.	½ to 3 minims. 10% Borneol. also 1.8% Esters.
Santali Oil of Sandal-Wood. Oil of Santal-Wood.	White Sandal-Wood (<i>Santalum album</i>).	Distillation. 0.973 to 0.985.	5 to 30 minims. (3 to 18 d.mils). 90% Santalol.
Sinapis Volatile Volatile Oil Mustard.	Black Mustard seed (<i>Brassica nigra</i>).	Mac. with water and dis- tillation. 1.014 to 1.025.	Vesicant. 92% Allyl Isothio- cyanate.
Therabinthinæ Rect. Oil of Turpentine. Spirit of Turpentine.	Osleo-resin Turpentine (<i>Pinus sylvestris</i>), and other species.	Distillation and Rectifi- cation. 0.860 to 0.870.	2 to 10 minims. 3 to 4 fl. dra. as Anthelmintic.
<i>Three Official Stearoptenes (Concrete Volatile Oils).</i>			
Camphora Camphor. $C_{15}H_{10}O$.	Wood of <i>Cinnamomum Camphora</i> .	Sublimation. Sp. Gr. 0.995.	2 to 5 grains. (12 to 30 c.gms).
Menthol Menthol. $C_{10}H_{18}O$.	Volatile Oils (<i>Mentha arvensis</i> vel <i>piperascens</i> et <i>glabrata</i>).	Refrigeration. Melting point, 42° C. (108° F.).	½ to 2 grains. (3 to 12 c.gms).
Thymol Thymol. Isopropyl-metacresol. $C_6H_7CH_2OH \cdot C_6H_7$.	Vol. Oils (<i>Thymus vulgaris</i> , <i>Monarda punctata</i> , <i>Carum copticum</i>).	Chemical Means.	½ to 2 grains. 15 to 30 grs. as Anthelmintic.

OLEO-RESINÆ. OLEO-RESINS.

Preparations consisting mainly of fixed or volatile oils associated with resin and some other constituents. *Derived* oleoresins are usually liquids, while *Natural* oleoresins are soft solids or thick liquids.

DERIVED OLEO-RESINS are obtained by percolating powdered oleoresin-carrying drugs with acetone or ether, and subsequently distilling the volatile solvent from the percolate; the oily residue which remains, constitutes the oleo-resin. The Oleoresins of aspidium, capsicum, cubeb, lupulin, pepper, ginger and other drugs, are obtained in this manner, but Oleoresin of Aspidium is the only official member of this group, and the B.P. very improperly styles it a *Liquid Extract*.

Extractum Filicis Liquidum. Liquid Extract of Male Fern. Oleo-Resin of Male Fern. Extracted with ether. Standardized to contain 20 per cent. of filicin. Tæniifuge. Dose, 45 to 90 minims (3 to 6 mils), best administered in gelatin capsules, in divided doses, every fifteen minutes, followed in 3 or 4 hours by a saline purgative.

NATURAL OLEO-RESINS are obtained mainly as exudates of plant-drugs, or by the destructive distillation of them. Those official are Copaiba, from the trunk of various species of *Copaifera*, Terebinthina Canadensis (Canada Turpentine) from the balsam trees (*Abies balsamea*); Pix Liquida (Tar) by destructive distillation from the wood of various species of pine.

OXYMELLA. OXYMELS. (SOUR-HONEYS).

Medicated honeys, containing acetic acid.

Three Official Oxymels (including Simple Oxymel).

Oxymel. Mel Acetatum. Purified honey, acetic acid and water. Strength: 1 acetic acid in 7. Sp. gr.: 1.290. Dose: 1 to 2 fl. dr. (4 to 8 mils.)

Oxymel Scillæ. Oxymel of Squill. Vinegar of squill and purified honey. Strength: 2 vinegar of squill in 7. Specific gravity: 1.290. Dose: $\frac{1}{2}$ to 1 fluid drachm (2 to 4 mils).

Oxymel Urgineæ. Oxymel of Urginea. Oxymel of Indian Squill. Vinegar of indian squill and purified honey. Strength: 2 vinegar of urginea in 7. Specific gravity: 1.290. Dose: $\frac{1}{2}$ to 1 fluid drachm (2 to 4 mils).



SPIRITUS. SPIRITS.

Alcoholic solutions of volatile substances either solid, liquid or gaseous.

This group may be considered in two classes: 1. Simple alcoholic solutions of various substances, chiefly volatile oils. In all Spirits of this class, the active constituents are only slightly soluble in water, hence they form cloudy mixtures when diluted with aqueous fluids, thereby furnishing a very minute subdivision of the active constituent and its perfect distribution throughout the mixture, which would not be possible without the intervention of the alcohol, and furnishes the explanation for the use of an alcoholic solution, rather than the undiluted volatile oil. 2. Compound alcoholic solutions of various bodies whose preparation involves more complicated processes, including distillation.

DOSEAGE.—Under preparations having a double range of dosage, the minimum range represents the dose for repeated administration, in most cases 20 to 40 minims (12 to 25 d.mils), and the maximum, 60 to 90 minims (4 to 6 mls), the quantity intended for a single administration.

UNOFFICIAL SPIRITS. Spiritus Vini Gallici (French Brandy. Eau de Vie), is distilled from wine and matured in oaker casks for four years. Sp. gr. 0.920 to 0.940; contains 36.5 p.c. (weight) of ethyl hydroxide, or 43.5 p.c. by volume.

Spiritus Ætheris Compositus. (Hoffman's Anodyne. Hoffman's Drops), is a solution of ethereal oil (heavy oil of wine) in alcohol and ether. Dose: 20 to 60 minims.

Spiritus Ammoniz Anisatus. (Anisated Spirit of Ammonia), contains anethol 3; rectified spirit 7; solution of ammonia 15.

SPIRITUS. SPIRITS.

Fifteen Official Spirits, including Rectified Spirit.

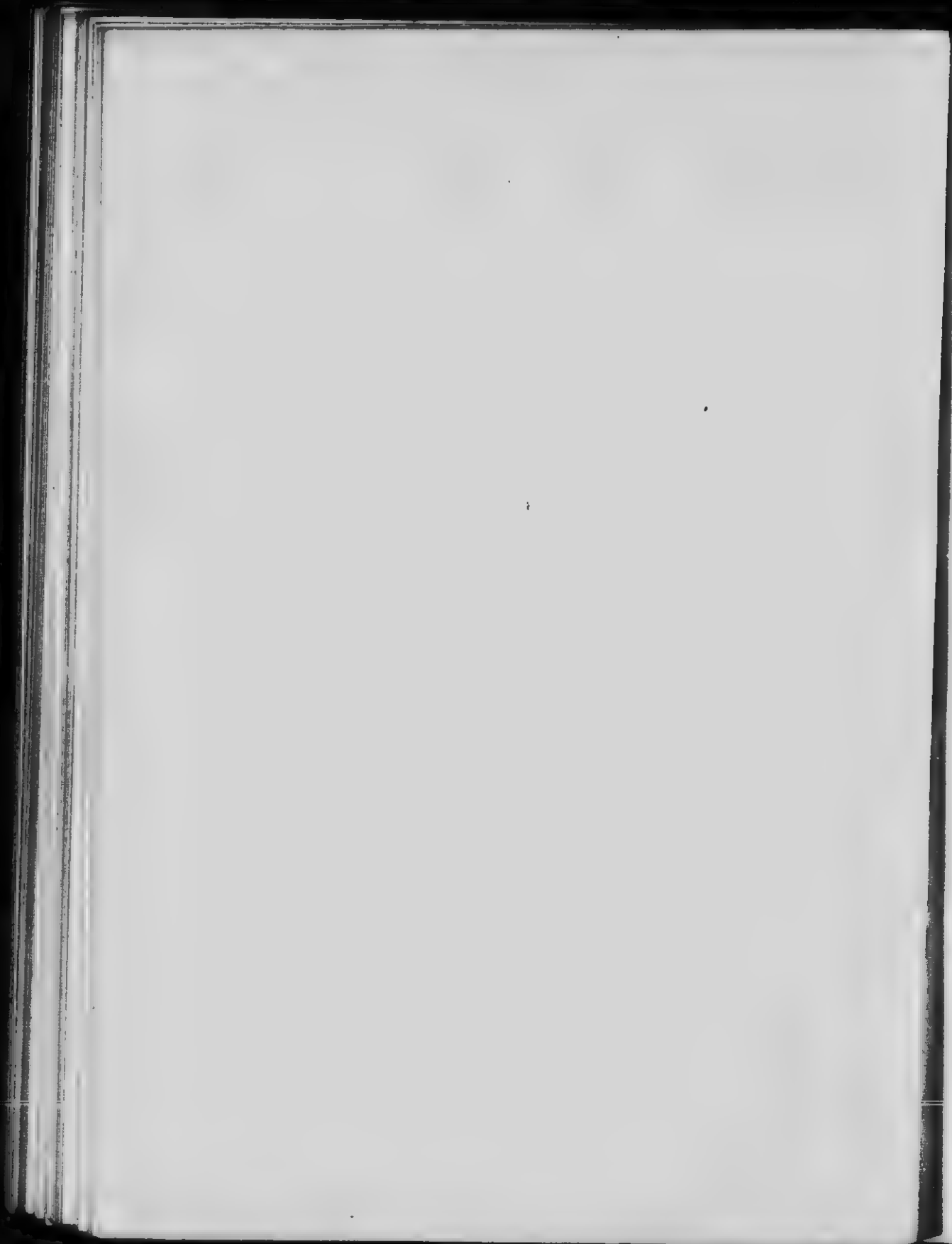
TITLES AND SYNONYMS.	INGREDIENTS.	SP. GR. STRENGTH.	DOSE.
I. SPIRITS MADE BY SIMPLE SOLUTION WITH RECTIFIED SPIRIT.—TEN.			
<i>Spiritus:</i>			
Ætheris Spirit of Æther.	Ether and rect. spirit.	0.806 to 0.811. 1 in 3.	20 to 40 minims. 60 to 90 minims.
Anisi Spirit of Anise.	Oil Anise, powd. talc. and rect. spirit.	1 in 10.	5 to 20 minims. (3 to 12 d.mils).
Camphoræ Spirit of Camphor. Tincture of Camphor.	Camphor and rect. sp.	Sp. gr. 0.850. 1 in 10.	5 to 20 minims.

SPIRITUS—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	Sp. Gr. STRENGTH.	DOSE.
<i>Spiritus:</i>			
Chloroformi Spirit of Chloroform. Spirit of Chloric Ether. Chloric Ether.	Chloroform and rectified spirit.	Sp. gr. 0.871. 1 in 10.	5 to 20 minims. 30 to 40 minims.
Cajuputi Spirit of Cajuput.	Oil Cajuput, po. talc. and rect. spirit.	1 in 10.	5 to 20 minims.
Cinnamomi Spirit of Cinnamon.	Oil Cinnamon po. talc. and rect. spirit.	1 in 10.	5 to 20 minims.
Juniperi Spirit of Juniper.	Oil Juniper, po. talc. and rect. spirit.	1 in 10.	5 to 20 minims.
Lavandulae Spirit of Lavender.	Oil Lavender, po. talc. and rect. spirit.	1 in 10.	5 to 20 minims.
Menthae Piperitae Spirit of Peppermint.	Oil Peppermint po. talc. and rect. sp.	1 in 10.	5 to 20 minims.
Myristicae Spirit of Nutmeg.	Volatile Oil Nutmeg, po. talc. and rect. spirit.	1 in 10.	5 to 20 minims.

II. SPIRITS INVOLVING DISTILLATION. THE DISTILLED SPIRITS.—SEVEN.

Ætheris Nitrosi Spirit of Nitrous Æ. or Spirit Nitric Ether. Sweet Spirit of Nitre.	HNO ₃ , H ₂ SO ₄ , alcohol, and copper wire.	0.838 to 0.843. 1.52 to 2.6 p.c. by weight of ethyl nitrite.	15 to 60 minims. (1 to 4 mēss).
Ammonia Aromaticus Aromatic Spirit Ammonia. Comp. Spirit of Ammonia. Spirit of Sal Volatile.	Strong sol. ammon., ammon. carbonate, oils of lemon and nut- meg et. spirit and water.	0.888 to 0.893. About 1.5 grs. am. carb. in 1 fl. dr.	20 to 40 minims. 60 to 90 minims. (well diluted).
Ammonia Fetida Fetid Spirit of Ammonia.	Amfetida, alcohol and strong sol. ammon.	0.842 to 0.850.	20 to 40 minims. 60 to 90 minims.
Armoracia Compositus Comp. Spirit Horseradish.	Horseradish root, alc., bitter orange peel, nutmeg, water.	0.917 to 0.937. 1 horseradish in 5.	1 to 2 fl. dr. (4 to 8 mēss).
Rectificatus Rectified Spirit. Ninety Per Cent. Alcohol.	Fermented saccharine fluids.	Sp. gr. 0.8337. 90 p.c. ethyl hydrox. (vol.) or 85.68 p.c. (weight).	



ALCOHOL ETHYLICUM. ETHYL ALCOHOL.

The various mixtures of Ethyl Hydroxide, C_2H_5OH , with water, used in pharmaceutical practice as solvents, are customarily designated by the term "spirit," combined with either a qualifying word which directly indicates its strength, or a phrase accepted generally as referring to an established strength, while in many cases, the proportional parts of alcohol and water represented in the mixture are stated, *e.g.*, "rectified spirit," "proof spirit," "pure spirit," "standard spirit," "commercial spirit," "forty-five per cent. spirit," "spirit two, water one," etc.

It is for this reason that the official dilutions of ethyl hydroxide are referred to here, following a discussion of the pharmacopoeial "Spirits." The title, Proof Spirit, having been deleted from the B.P., it is to be regretted that the name Rectified Spirit was not also discarded, in order that all dilutions of Ethyl Hydroxide might be designated as *Alcohol* of a stated strength, even as the term is now employed in characterizing the dilutions of Rectified Spirit.

Alcohol Absolutum. Absolute Alcohol. Pure Alcohol. Obtained by the removal of water from less strong Ethylic Alcohol, and subsequent distillation. Specific gravity, 0.794 to 0.7969. 74 O.P. Strength, not less than 99 p.c. (weight) or 99.4 p.c. (vol.) of ethyl hydroxide.

Spiritus Rectificatus. Rectified Spirit. Alcohol, 90 p.c. Obtained by the distillation of fermented saccharine liquids. Specific gravity, 0.8337. Strength, 85.68 p.c. (weight) or 90 p.c. (vol.) of ethyl hydroxide. 57.8 O.P. May be prepared from Commercial Alcohol by diluting 19½ fl. ozs. with sufficient distilled water to make when cooled one pint, or 153¼ fl. ozs. to make one gallon.

ALCOHOL DILUTUM.

Under the general title, Diluted Alcohol, the four dilutions of rectified spirit mentioned below are official.

ALCOHOL, 70 P.C.—Specific gravity, 0.8899. Strength, 66.4 p.c. (weight) or 70 p.c. (vol.) of ethyl hydroxide. 22.78 O.P. Prepared by diluting 1000 mls of Rectified Spirit with 310.5 mls of distilled water; or from Commercial Alcohol (65 O.P.), by mixing 14½ fl. ozs. with enough water to make one pint, or 119¼ fl. ozs. with water to make one gallon.

ALCOHOL, 60 P.C.—Specific gravity, 0.9134. Strength, 52 p.c. (weight) or 60 p.c. (vol.) of ethyl hydroxide. 5.18 O.P. Prepared by diluting 1000 mls of Rectified Spirit with 536.5 mls of distilled water; or from commercial alcohol (65 O.P.), by diluting 12.75 fl. ozs. with water to make one pint, or 102 $\frac{1}{2}$ fl. ozs. with water to make one gallon.

ALCOHOL, 45 P.C.—Specific gravity, 0.9435. Strength, 38 p.c. (weight) or 45 p.c. (vol.) of ethyl hydroxide. 21 U.P. Prepared by diluting 1000 mls of Rectified Spirit with 1053.4 mls of distilled water, or from commercial alcohol (65 O.P.), by diluting 9.5 fl. ozs. with water to make one pint, or 76.5 fl. ozs. with water to make one gallon.

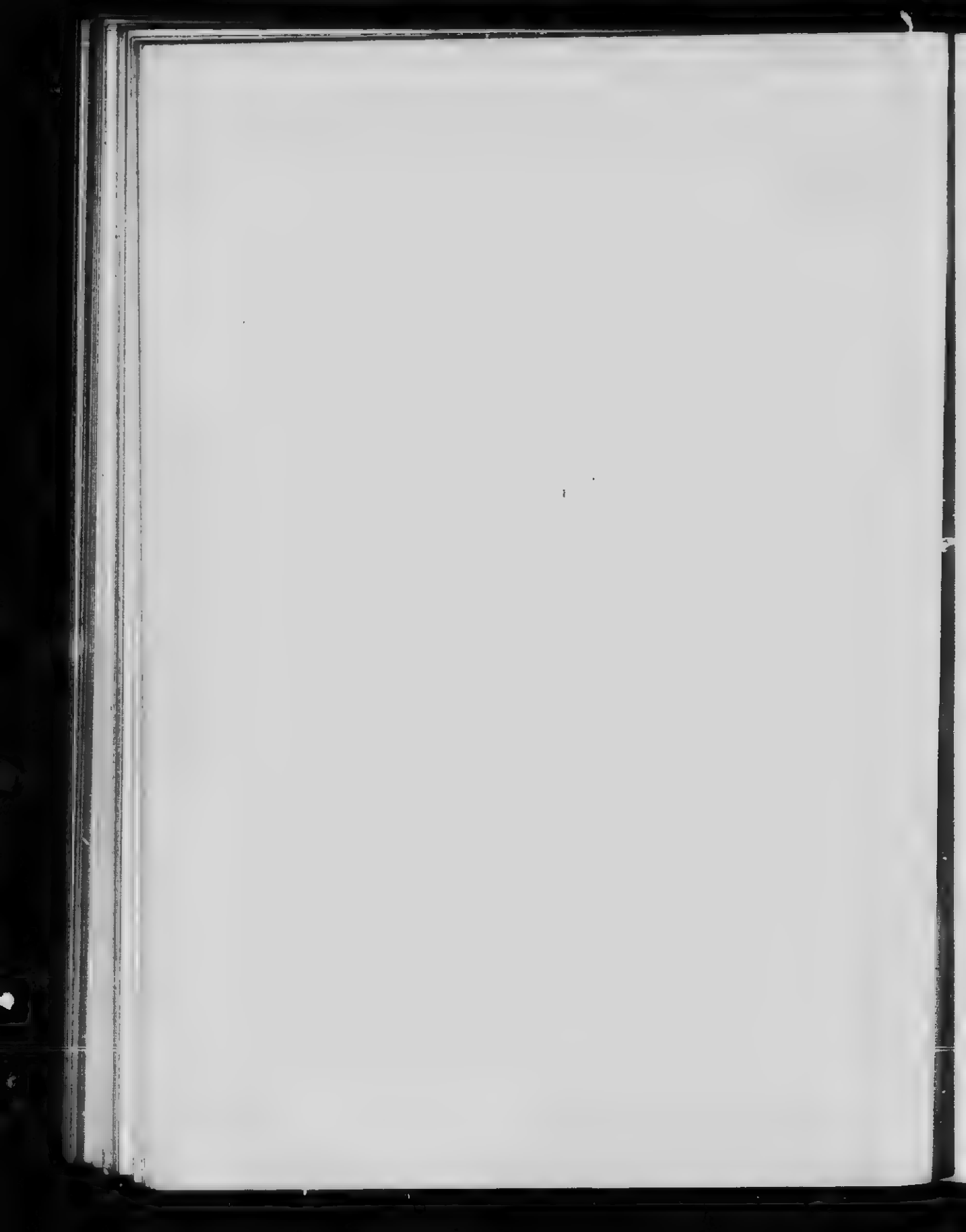
ALCOHOL, 20 P.C.—Specific gravity, 0.9760. Strength, 16.3 p.c. (weight) or 20 p.c. (vol.) of ethyl hydroxide. 65 U.P. Prepared by diluting 1000 mls of Rectified Spirit with 3558 mls of distilled water, or from commercial alcohol (65 O.P.) by diluting 4.25 fl. ozs. with water to make one pint, or 34 fl. ozs. with water to make one gallon.

UNOFFICIAL.

COMMERCIAL ALCOHOL.—The alcohol made use of for pharmaceutical and general purposes in the Dominion of Canada, is known as "65 Over Proof," and is commonly, though incorrectly, termed "Ninety-five Per Cent. Spirit." Specific gravity, 0.820 (actual 0.8199). Contains 91 p.c. by weight, of ethyl hydroxide, or approximately 94 p.c. by volume.

SPIRITUS TENUIOR Proof Spirit. Specific gravity, 0.920. Strength, 49 p.c. (weight) or 57 p.c. (vol.) of ethyl hydroxide. Owes its name to the fact that it is the excise unit according to which duty is assessed by the Government. It may be prepared from commercial alcohol (65 O.P.) by diluting 12 $\frac{1}{2}$ fl. ozs. with water to make one pint, or 97 fl. ozs. with water to make one gallon.

NOTE.—The following table shows the quantity of commercial alcohol, known as 65 O.P., and containing 91 p.c. of ethyl hydroxide, by weight, or 94 p.c., by volume, required to prepare Diluted Alcohol of the strengths stated. The words pints, gallons, mls or liters may, if desired, be substituted for "fluid ounces," in each column.



ALCOHOL DILUTION TABLE

Volume of Diluted Alcohol desired:	STRENGTH OF DILUTED ALCOHOL DESIRED.						Use of Pure Water enough to make when cooled to 15° C.:
	90 p.c. (vol.)	70 p.c. (vol.)	60 p.c. (vol.)	45 p.c. (vol.)	30 p.c. (vol.)	Proof Spirit. Excise Standard.	
	Use of 94 p.c. 65 O.P. Alcohol.	Use of 94 p.c. 65 O.P. Alcohol.	Use of 94 p.c. 65 O.P. Alcohol.	Use of 94 p.c. 65 O.P. Alcohol.	Use of 94 p.c. 65 O.P. Alcohol.	Use of 94 p.c. 65 O.P. Alcohol.	
fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.	fl. ozs.
5	4 6-8	3 6-8	3 1-8	2 7-16	1 1-16	3	5
10	9 4-8	7 4-8	6 3-8	4 6-8	2 1-8	6 1-16	10
15	14 3-8	11 1-8	9 4-8	7 2-8	3 3-16	9 3-32	15
20	19 1-8	14 7-8	12 6-8	9 4-8	4 2-8	12 1-8	20
25	24	18 5-8	16	12	5 5-16	15 1-8	25
30	28 6-8	22 3-8	19 1-8	14 3-8	6 3-8	18 1-8	30
35	33 4-8	26	22 3-8	16 7-8	7 7-16	21 2-8	35
40	38 2-8	29 6-8	25 4-8	19 1-8	8 4-8	24 2-8	40
45	43	33 4-8	28 6-8	21 6-8	9 9-16	27 2-8	45
50	47 7-8	37 4-8	32	24	10 5-8	30 2-8	50
60	57 4-8	44 5-8	38 2-8	28 6-8	12 6-8	36 3-8	60
70	67	52 1-8	44 5-8	33 4-8	14 7-8	42 4-8	70
75	71 7-8	55 7-8	47 7-8	36 2-8	16	45 4-8	75
80	76 4-8	59 5-8	51	38 2-8	17	48 4-8	80
90	86	67	57 4-8	43	19 1-8	54 4-8	90
100	95 6-8	74 4-8	63 7-8	47 7-8	21 2-8	60 5-8	100
160	153 1-8	119 1-8	102 1-8	76 4-8	34	97	160

Example—If 40 fluid ounces of Alcohol, 70 p.c., are required, find the figure 40 in the first column, and on the same line in the column bearing the heading, 70 p.c., find 29'6-8, which indicates that 29'6-8 fl. ozs. of Commercial Alcohol (65 O.P.), are required, to which distilled water is added to make the solution measure 40 fl. ozs. and which is agitated and cooled to 15'5° C. (60° F.) more water is to be added, to complete the desired volume—40 fluid ounces.

RULE FOR DILUTING ALCOHOL OF KNOWN STRENGTH TO PRODUCE A WEAKER ALCOHOL OF DESIRED STRENGTH.—Multiply the required quantity by the desired volume-percentage strength, and divide by the higher percentage; the quotient will be the quantity of stronger spirit required, which is to be diluted with enough distilled water to make the desired volume.

NOTE.—When diluting alcohol with water, there is evolution of heat accompanied by contraction of volume; it therefore becomes necessary to wait until the liquid has been cooled to 15'5° C. (60° F.) and full contraction

has taken place, and then make up the deficiency in volume by adding more distilled water.

Example.—Make one-half gallon (80 fl. ozs.) of Alcohol, 60 p.c. from Alcohol 90 p.c. $80 \times 60 = 4800$, and $4800 \div 90 = 53\frac{1}{3}$.

Answer.— $53\frac{1}{3}$ fl. ozs. of 90 p.c. Alcohol are to be mixed with sufficient water to make (after contraction has ceased), 80 fl. ozs. of 60 p.c. Alcohol.

RULE FOR CALCULATING THE PROOF STRENGTH OF SPIRITS.—Multiply the volume-percentage strength of the spirit by 1.753 and to the product add minus 100 (–100); plus quantities are Over-Proof and minus quantities, Under-Proof.

Alcohol, 60 p.c. (vol.), becomes $(60 \times 1.753) \text{ add } -100 = 5.18$ O.P., and likewise Alcohol, 45 p.c. (vol.), is $(45 \times 1.753) \text{ add } -100 = 21$ U.P.

RULE FOR TRANSPOSING VOLUME STRENGTH OF SPIRITS INTO WEIGHT-STRENGTH.—Multiply the volume-percentage by 0.7938 and divide the product by the Specific Gravity of the spirit. The converse of this rule enables the transposal of weight-strength into volume-strength.

The weight-strength of Rectified Spirit, Alcohol, 90 p.c. (vol.) becomes $\frac{90 \times 0.7938}{0.8337} = 85.6$ p.c. ethyl hydroxide by weight. Alcohol containing

16.3 p.c. ethyl hydroxide by weight represents $\frac{16.3 \times 0.976 \text{ (sp. gr.)}}{0.7938} = 20$ per cent. by volume.

SUCCI. JUICES.

The prepared juices of fresh plant-drugs, rendered permanent by the addition of alcohol; or, the simple juices of ripe fruits.

They are crude, variable and unreliable preparations.

PREPARATION.—The prepared juices are obtained after the following manner: The fresh drug is bruised in a suitable mortar; the juice is forcibly expressed and mixed with one-third its volume of rectified spirit. On standing for a period of seven days, gums, pectin and albuminous matters separate and deposit, and the liquid may be filtered bright.

Strength, three volumes of the plant juice in four volumes.

Two Official Prepared Juices.

Succus Scoparii. Juice of Broom (tops). Dose, 1 to 2 fl. drs. (4 to 8 mls).

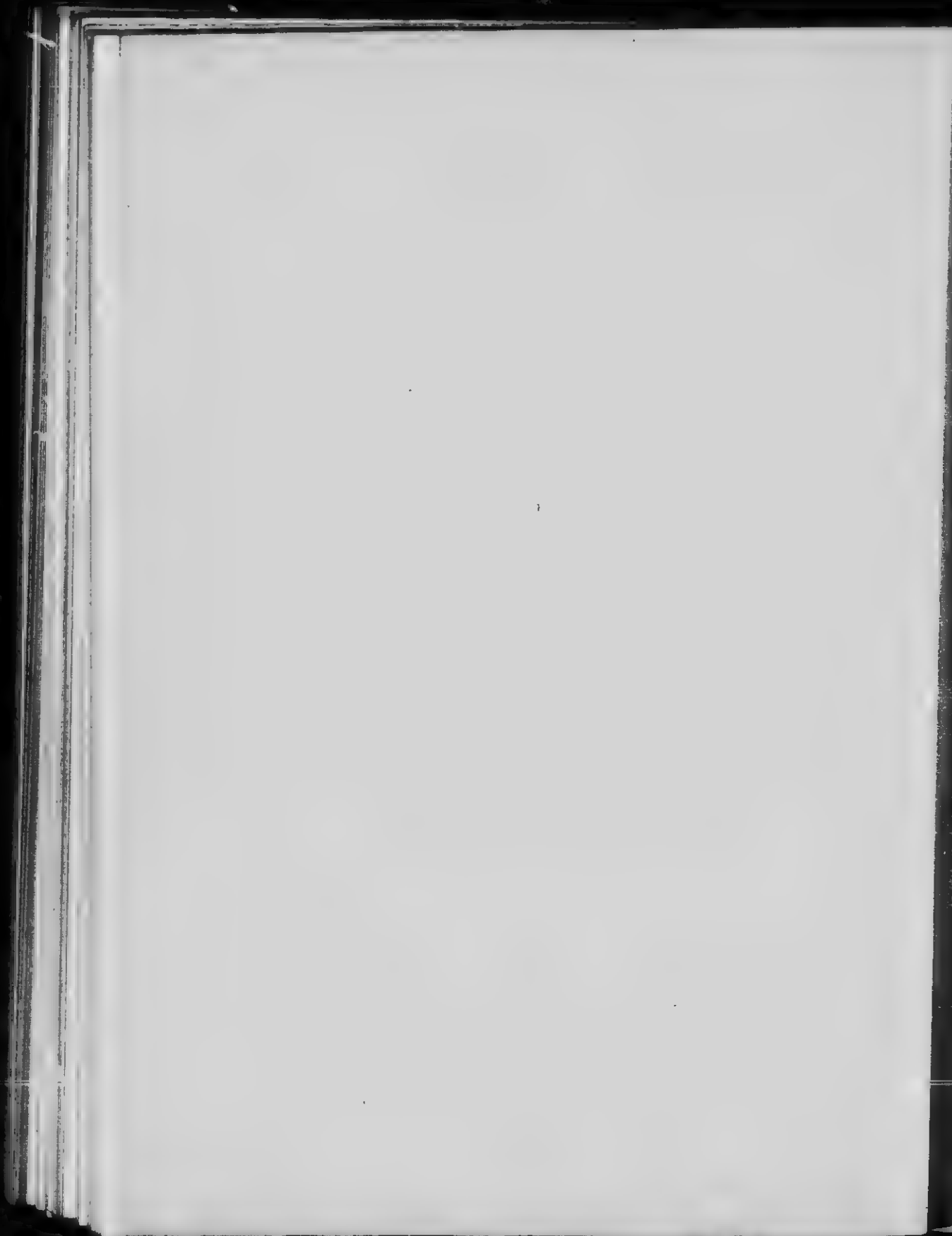
Succus Taraxaci. Juice of Dandelion (root). Dose, 1 to 2 fl. drs. (4 to 8 mls).

One Simple Juice.

Succus Limonis. Lemon Juice, freshly expressed from the ripe fruit.

Sp. gr., 1.03 to 1.04. Contains about 8 per cent. of citric acid. Does not keep well, unless ten per cent. of rectified spirit has been added.

The juices of belladonna, conium and henbane were formerly official but are not now recognised by the B.P.



SYRUP. SYRUPS.

Concentrated aqueous sugar solutions, either with or without medication, for internal use.

A dense solution of refined sugar in water, is termed Simple Syrup, and when impregnated with one or more medicinal substances, it is known as a Medicated Syrup. The largest component of all official syrups is a highly refined, granulated sucrose, recognized officially as:—

Saccharum Purificatum. Refined Sugar. Sucrose or Saccharose $C_{12}H_{22}O_{11}$. The crystallized sugar from the juice of the sugar-cane, sugar-beet and other plants, in colourless crystals, or in crystalline masses.

UTILITY.—Sugar is employed in the preparation of syrups, chiefly on account of the following three important features which it possesses, namely:—

- (1) It renders more palatable the remedies with which it is combined, and therefore serves as a desirable vehicle, especially when such remedies are to be administered to children.
- (2) The preservation from decomposition of the proximate principles of plant drugs in strong sugar solutions. Weak syrups do not possess this preservative action, being themselves liable to various kinds of fermentation, or putrefactive decomposition, or the development of fungi (molds).
- (3) The retarding influence exerted by sugar upon many chemical changes, particularly the oxidation of ferrous salts.

PERMANENCY.—The fact that dilute solutions of sugar readily ferment or undergo putrefactive changes, while saturated or nearly saturated solutions, such as form the basis of the official syrups may be preserved indefinitely under proper conditions, is not to be attributed to any specific action of an antiseptic nature of sugar upon micro-organisms, but to the physical conditions prevailing in strong sugar solutions, which possess strong osmotic properties, and consequently disturb the vital functions of the protoplasm of the molds and bacteria. Such strong solutions are physically unfitted for their cell-growth, although containing the substance which in a dilute form furnishes an efficient nutrient medium for their development.

QUANTITY OF SUGAR.—About sixty-five *per cent.* of the best refined granulated sugar is necessary to effectually protect syrups, and this sugar must be absolutely free from glucose or other reducing sugar, and ultramarine or Prussian blue (substances often used to "face" imperfectly refined sugar by masking its yellow tint).

To ensure the necessary proportion of sugar, care should be taken

to accurately adjust the weight or volume of the finished syrup, as directed in the formula.

In a few of the official syrups, the quantity of sugar that will dissolve in the medicated liquid under the specified conditions, is not sufficient to render the product permanent, hence preservation is further aided by the addition of antiseptics, as *alcohol* in Syrups of Senna, Red Poppy, Lemon, and Aromatic Cascara, or *glycerin* in Syrup of Wild Cherry.

METHODS OF INCORPORATING SUGAR.—1. Dissolving the sugar by means of heat, in a previously medicated liquid. This method is resorted to in preparing the following syrups, viz: Indian Squill, Lemon, Rhubarb, Red Poppy, Rose, Squill, Senna and Tolu.

2. Adding the sugar in the form of previously prepared simple syrup, to a concentrated medicated solution. This method is chosen when the medicating principle is either a volatile constituent, or one sensitive to the action of heat, as in Aromatic Syrup, Syrups of Orange, Aromatic Cascara, Chloral, Codeine Phosphate, Ferrous Iodide, Ferrous Phosphate, Ferrous Phosphate with Quinine and Strychnine, Ginger, Glucose, Hydriodic Acid and Orange-Flower.

3. Dissolving sugar in a cold medicated liquid by agitation, as in Syrup of Orange-Flower; the medicated liquid being prepared by chemical solution, as in Syrup of Calcium Lactophosphate, or by percolation with water, Virginian Prune.

COLD-PERCOLATION PROCESS.—Though the utmost care may be observed in the preparation of syrups, yet when heat is employed in dissolving the sugar, they often become moldy or undergo fermentative changes. It has been found that the heat employed is often the disturbing factor, as even simple syrup, when made at a boiling temperature, will, soon after it has been prepared, reduce Potassio-Cupric Tartrate Solution, showing the presence of grape-sugar, while in syrups made without heat, grape-sugar is formed very slowly, if at all. When acids are present, this deterioration goes on more rapidly, especially during prolonged boiling, therefore, the Cold Percolation Process, though unofficial, is worthy of mention and use, as it furnishes permanent and elegant syrups. It may be accomplished after the following manner:—Cork the lower orifice of a suitable conical percolator, and introduce with gentle pressure a moistened piece of loose cotton or soft sponge into the neck. Introduce the proper quantity of pure, refined, granulated sugar; pour upon it the water or medicated liquid and allow the mixture to stand until the sugar has dissolved down to *half its bulk*, then remove the cork and allow the syrup to drop. It should pass from the lower orifice perfectly transparent and clear, but if the first portion be turbid, it should be returned to the percolator until it passes clear.



UNOFFICIAL.—The following officinal syrups are commonly prescribed: *Syrupus Scille Compositus* (Hive Syrup, Croup Syrup), containing 5 grains each of squill and senega and one-eighth grain of tartarated antimony in each fluid drachm. Dose, 10 to 20 min. *Syrupus Ferri Phosphatis Compositus* (Chemical Food, Compound Syrup of Phosphates) containing the phosphates of calcium, iron (ferrous), potassium, sodium and ammonium. Dose, one-half to two fluidrachms as a tonic.

Syrupus Hypophosphitum Compositus. (Compound Syrup of Hypophosphites), containing the hypophosphates of calcium, sodium, potassium, iron, manganese, quinine and strychnine. Dose, one to two fluidrachms. *Syrupus Pectoralis*. (Jackson's Pectoral or Cough Syrup), containing morphine hydrochloride 1 grain, oil of sassafras 1 minim, in syrup of acacia 4 fluid ounces. Dose, 1 fluidrachm. *Syrup of Ipecac and Opium*. (Syrup of Dover's Powder), containing tincture of ipecac and opium, and syrup, flavoured with spirit of cinnamon; each fluidrachm represents 5 grs. of Dover's powder. Dose, 1 fluidrachm.

STORING.—Syrups should be put into clean and dry bottles, well-filled, tightly corked (if the syrup be hot when bottled, the bottle should be shaken frequently until cold), and kept in a moderately cool place. Syrup of Ferrous Iodide should be stored in small, colourless-glass bottles and exposed to daylight.

DOSES.—The general dose of the official syrups is one-half to one fl. dr. (2 to 4 mds), with five exceptions, viz., Syrups of Cascara Aromatic, Chloral, Codeine Phosphate, Rhubarb and Senna, which are to be given in doses of, one-half to two fluidrachms (2 to 8 mds).

SYRUPS.

Twenty-two Official Syrups.

TITLES AND SYNONYMS.	IMPORTANT INGREDIENTS.	PROCESSES.	STRENGTH.	DOSE. REMARKS.
I. UNMEDICATED SYRUPS.—Two.				
<i>Syrupus</i> Syrup. Simple Syrup. Syrupus Sacchari. Glucosi Syrup Glucose.	Refined Sugar (2) Water (1).	Solution by heating.	Specific gravity 1.30. 1 in 1.5 (weight). 4 0/23 in 4.5 fl. oz.	Vehicle.
	Liquid Glucose (1) and Syrup (2).	Admixture by heating.	1 Glucose in 3.	Pill Excipient.

SYRUPS—Continued.

TITLES AND SYNONYMS.	IMPORTANT INGREDIENTS.	PROCESSES.	STRENGTH.	DOSE. REMARKS.
II. SYRUPS MADE BY SIMPLE ADMIXTURE OF MEDICATED LIQUID WITH SUGAR OR SYRUP.—ELEVEN.				
<i>Syrups:</i> Acidi Hydriodici Syrup of Hydriodic Acid.	Diluted Hydriodic Acid. Syrup and Water.	Admixture.	1 per cent. Hl. w/v.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Aromaticus Aromatic Syrup.	Tinct. Orange, Cinnamon Water, Powd. Talc and Syrup.	Admixture and Clarification.	1 Tincture orange in 4.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Aurantii Syrup of Orange.	Tinct. Orange and Syrup.	Admixture.	1 Tincture orange in 8.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Aurantii Floris Syrup of Orange-Flower.	Orange-fl. Water (strong), Sugar and Syrup.	Admixture and Solution.	15 p.c. orange-fl. water.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Cascaræ Aromaticus Aromatic Syrup of Cascara.	Liq. Ext. Cascara, Tinct. Orange, Alcohol 90 p.c., Cinnamon Water and Syrup	Admixture.	4 liq. ext. in 10. 24 gra. bark in 1 fl. dr.	$\frac{1}{2}$ to 2 fl. dra. (2 to 8 mls).
Chloral Syrup of Chloral.	Chloral Hydrate, Water and Syrup.	Solution and Admixture.	10 gra. in 1 fl. dr.	$\frac{1}{2}$ to 2 fl. dra. (2 to 8 mls).
Codeinæ Phosphatis Syrup of Codeine Phosphate.	Codeine Phosphate, Water and Syrup.	Solution and Admixture.	Abt. 1-4 gr. in 1 fl. dr.	$\frac{1}{2}$ to 2 fl. dra. (2 to 8 mls).
Ferri Iodidi Syrup of Ferrous Iodide. Syrup of Iodide of Iron.	Iron, Iodine, Glucose, Syrup and Water.	Chemical Solution and Admixture.	5 p.c. Ferrous Iodide. 1 gr. in 16 minims. $3\frac{1}{4}$ gra. in 1 fl. dr.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Ferri Phosphatis Syrup of Ferrous Phosphate. Syrup of Phosphate of Iron.	Iron, Conc. Phosphoric Acid, Syrup and Water.	Chemical Solution and Admixture.	1 gr. anhydrous salt in 1 fl. dr.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Ferri Phosphatis c̄ Quinina et Strychnina Syrup Phosphate of Iron with Quinine and Strychnine. Syrup of Triple Phosphates. Easton's Syrup.	Iron, Conc. Phosphoric Acid, Strychnine, Quinine Sul- phate, Syrup and Water.	Chemical Solution and Admixture.	1 fl. dr. contains: 1 gr. anhyd. Fe(PO ₄) ₂ , 4-5 gr. quinine sul- phate. 1-32 gr. strychnine.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Zingiberis Syrup of Ginger.	Ginger, fine powd., Alcohol 90 p.c., and Syrup.	Percolation and Admixture.	1-5 gra. in 1 fl. dr.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).

III. SYRUPS MADE BY DISSOLVING SUGAR IN THE MEDICATED LIQUID WITH HEAT.—EIGHT.

Syrups:

Limonis Syrup of Lemon.	Lemon juice, Lemon Peel, Alcohol 90 p.c. and Sugar.	Maceration and Solution.	1 lemon juice in 2.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Rhei Syrup of Rhubarb.	Rhubarb, Oil of Coriander, Alcohol 90 p.c., Sugar and Water.	Percolation, Evapor- ation and Solution.	Specific gravity 1.31. 7 p.c. Rhubarb. $4\frac{1}{2}$ gra. in 1 fl. dr.	$\frac{1}{2}$ to 2 fl. dra. (2 to 8 mls).
Rhoeados Syrup of Red-Poppy.	Fresh Red-Poppy Petals, Sugar, Alcohol 90 p.c., and Water.	Infusion and Solu- tion.	15 $\frac{1}{2}$ gra. in 1 fl. dr.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Rose Syrup of Rose.	Dried Rose Petals, Sugar and Boiling Water.	Infusion and Solu- tion.	About 1 in 10.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Scillæ Syrup of Squill	Vinegar Squill, Water and Sugar.	Solution.	About 1 Squill in 8.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Sennæ Syrup of Senna.	Senna, Oil Coriander, Rect. Spirit, Alcohol 20 p.c. and Sugar	Re-maceration, Evaporation and Solution.	About 1 in 1 $\frac{1}{4}$ (vol.).	$\frac{1}{2}$ to 2 fl. dra. (2 to 8 mls).
Tolutanus Tolu Syrup. Syrup of Tolu Balsam.	Tolu Balsam, Sugar and Water.	Decoction and Solution.	About 2 gra. in 1 fl. dr.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Urgineæ Syrup of Urginea. Syrup of Indian Squill.	Vinegar Urginea, Sugar and Water.	Solution.	About 1 Urginea in 18.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).

IV. SYRUPS MADE BY DISSOLVING SUGAR IN THE MEDICATED LIQUID WITHOUT HEAT.—TWO.

Calcii Lactophosphatis Syrup Lactophosphate Calcium.	Calcium Lactate, Conc. Phosphoric Acid, Sugar, Orange-flower Water and Water.	Chemical Solution and Admixture.	1 fl. dr. contains abt. 5 gra. Calc. Lactate.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).
Pruni Virginianæ Syrup of Virginian Prune. Syrup of Wild Cherry.	Virginian Prune Bark, Gly- cerin, Sugar and Water.	Percolation and Solution.	3 in 20.	$\frac{1}{2}$ to 1 fl. dr. (2 to 4 mls).

TINCTURÆ. TINCTURES.

Solutions of non-volatile, or only partially volatile medicinal substances, in liquids other than water and glycerin. They are mainly obtained by treating crude drugs with alcoholic menstrua in order to extract, and obtain in the form of alcoholic solution, the constituents soluble in such menstrua.

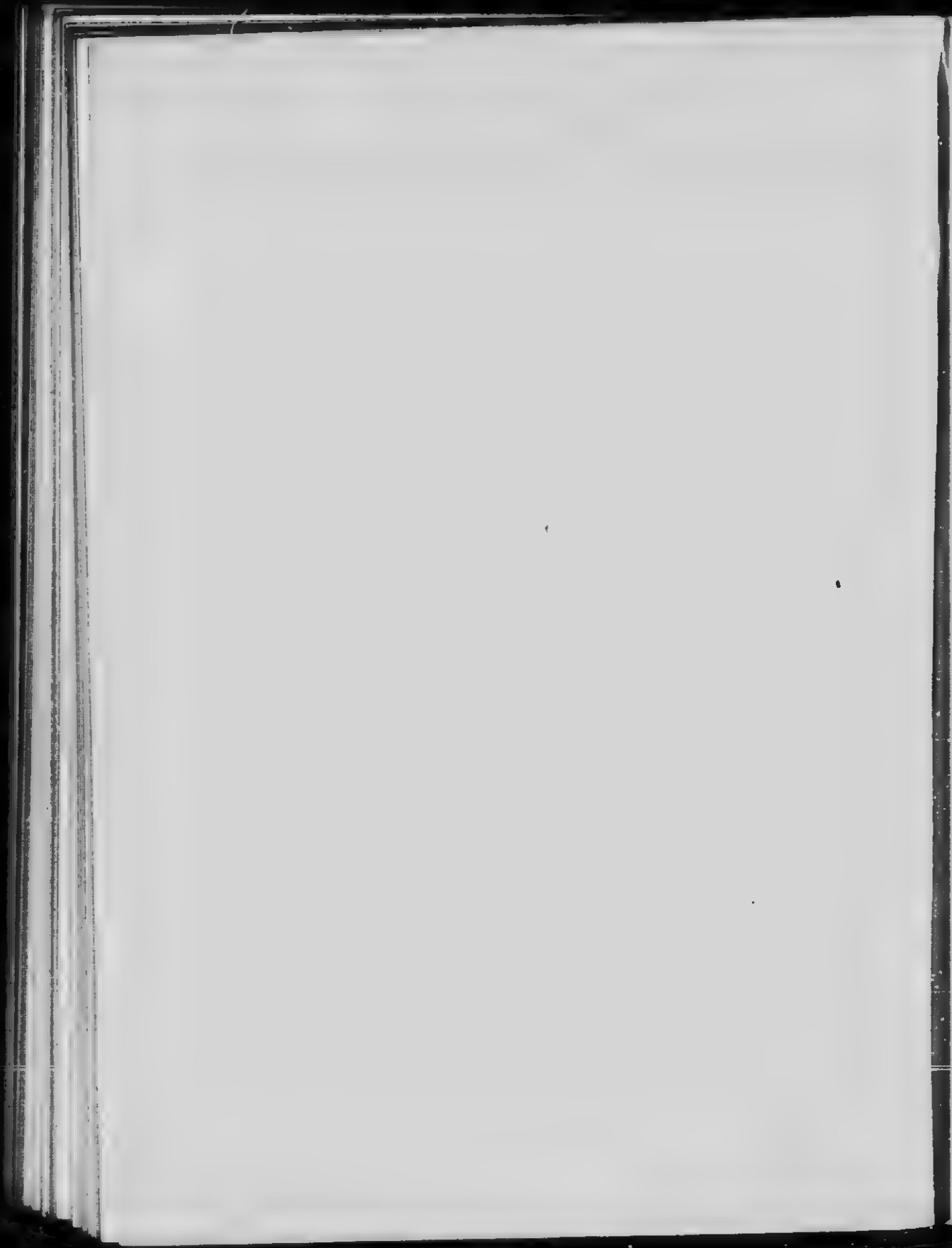
Aqueous solutions of volatile substances are termed Medicated Waters (*Aquæ*), and solutions of similar substances in alcohol, Spirits (*Spiritus*), while solutions of volatile or non-volatile bodies in glycerin are termed Glycerins (*Glycerina*).

UTILITY.—Tinctures constitute a large and important class of preparations, the extensive employment of which in medicine, being due largely to (1) the facility with which alcohol exhausts certain drugs, such as benzoin, cannabis, aconite, myrrh, ginger, etc.; (2) their permanence, owing to the antiseptic properties of alcohol; (3) their attractive appearance, due to the fact that they can usually be filtered bright, since alcohol coagulates and does not extract albuminous and gummy constituents which form the chief obstacles to the clarification of other classes of preparations, as infusions, decoctions, etc.; (4) the fact that the medicinal action of many tonic and carminative remedies like cinchona, gentian, ginger, etc., is claimed to be distinctly promoted by the association of their active principles with alcohol.

METHODS OF PREPARATION.—Maceration and percolation are the chief methods, twenty-three tinctures being made by maceration, thirty-three by percolation, and fifteen by other methods. Of the tinctures made by maceration, some may be advantageously prepared by percolation, the latter process being precluded only in connection with resins, oleo-resins, balsams, most gum-resins and drugs rich in extractive. The processes of percolation and maceration officially enjoined in preparing tinctures are substantially as follows:—

PERCOLATION.—In selecting percolators, the cylindrical form will, in most cases, be found very satisfactory, preferably made of glass or earthenware, and having a length at least six times its diameter. If the conical form be employed, the upper diameter should be not more than twice its lower diameter.

The drug is thoroughly moistened with the prescribed quantity of menstruum, and the mixture set aside in a well-covered vessel



for 24 hours. It is then packed in a percolator, regulating the pressure to be applied, either lightly, moderately or firmly, in accordance with the texture of the drug. Further menstruum is then to be poured upon the packed drug in portions, at intervals, always maintaining a stratum of liquid above the drug, throughout the process. Macerate for 24 hours; then allow the percolate to pass slowly at first and afterwards less slowly, until a sufficient quantity of the menstruum has been applied to yield about seventy-five per cent. of the prescribed volume of the tincture, or until the drug has become exhausted. When the percolate ceases to pass, submit the marc to pressure in a suitable tincture-press. Set the expressed liquid aside for twenty-four hours, and filter, if necessary; mix the filtrate with the percolate, and add sufficient of the menstruum to produce the desired volume of tincture. Clarify by subsidence or filtration, if necessary.

MACERATION.—The drug is mixed with the whole of the menstruum in a well-covered vessel (wide-mouth bottle or earthenware jar) and allowed to remain for seven days, frequently agitating. The mass is then strained and the marc submitted to pressure; the colature and expressed liquid are mixed, and clarified if necessary, by filtration or subsidence, or both.

TINCTURES MADE BY THE OFFICIAL PROCESS OF PERCOLATION:—Tinct. Aconiti, Arnicæ Florum, Belladonnæ, Berberidis, Buchu, Cardamomi Composita, Cascarillæ, Chirata, Cinchonæ, Cinnamomi, Colchici, Cubebæ, Daturæ Semen, Digitalis, Ergotæ Ammoniata, Gelsemii, Hamamelidis, Hyoscyami, Jalapæ, Jalapæ Composita, Kaladanæ, Kramerizæ, Lobeliæ Ætherea, Oliveri Corticis, Pyrethri, Quillaizæ, Rhei Composita, Senegæ, Sennæ Composita, Serpentariæ, Stramonii, Strophanthi, Zingiberis,—33 tinctures.

TINCTURES MADE BY THE OFFICIAL PROCESS OF MACERATION:—Tinct. Alstoniæ, Aurantii, Calumbæ, Capsici, Catechu, Cocci, Gentianæ Composita, Lavandulæ Composita, Limonis, Opii, Picrorhizæ, Pruni Virginianæ, Quassizæ, Scillæ, Urgineæ, Valerianæ Ammoniata, Valerianæ Indicæ Ammoniata,—17 tinctures and by a process of Simple Maceration which differs from the general process of the B.P.:—Tinct. Asafetidæ, Benzoini Composita, Cinchonæ Composita, Guaiaci Ammoniata, Kino, Myrrhæ,—6 tinctures.

TINCTURES MADE BY SOLUTION OR DILUTION.—(a) Alcoholic solu-

tions of proximate principles, or definite chemical substances, not made by the selective action of alcohol upon crude drugs, viz.: Tinct. Chloroformi et Morphinæ Composita, Ferri Perchloridi, Iodi Fortis, Iodi Mitis, Quininæ, Quininæ Ammoniata,—6 tinctures; (b) Tinctures made by dissolving the previously prepared extracts, resins, etc., of certain drugs in alcohol, or diluting them with alcoholic menstrua; they include Tinct. Camphoræ Composita, Cannabis Indica, Cantharidini, Hydrastis, Nucis Vomicae, Opii Ammoniata, Podophylli, Podophylli Indici, Tolutana,—9 tinctures.

MENSTRUUA.—The menstrua employed in preparing the official tinctures (excepting tincture of ferric chloride) contain proportions of alcohol varying from 45 to 90 per cent. by volume. Other liquids are however employed in exceptional cases, they are:—Spirit of ether, tincture of orange, chloroform, alcohol with water and glycerin, alcohol with solution of ammonia.

In all cases where Solution of Ammonia or Spirit of Ether is represented in the menstruum, the tinctures bear the corresponding distinguishing titles, *Ammoniated*, or *Ethereal*.

PREPARED WITH RECTIFIED SPIRIT. ALCOHOL, 90 PER CENT.:—

Tinct. Aurantii, Benzoini Composita, Cannabis Indicae, Cantharidini, Chloroformi et Morphinæ Composita, Cubebæ, Guaiaci Ammoniata, Iodi Fortis, Iodi Mitis, Kino, Lavandulæ Composita, Limonis, Myrrhæ, Opii Ammoniata, Podophylli, Podophylli Indici, Strophanthi, Tolu, Zingiberis,—19 tinctures.

PREPARED WITH DILUTED ALCOHOL:—

ALCOHOL, 70 PER CENT.—Tinct. Aconi Asafetida, Belladonnae, Cascarilla, Cinchona, Cinchona Composita, Cinnamomi, Colchici, Daturæ Semen, Digitalis, Hyoscyami, Jalapæ, Kaladana, Pyrethri,—14 tinctures.

ALCOHOL, 60 PER CENT.—Tinct. Alstonia, Berberidis, Buchu, Calumbæ, Camphoræ Composita, Capsici, Chirata, Ergotæ Ammoniata, Gelsemii, Hydrastis, Jalapæ Composita, Krameria, Oliveri Corticis, Quillaia, Quininæ Ammoniata, Scilla, Senegæ, Serpentaria, Urginea, Valeriana Ammoniata, Valeriana Indica Ammoniata,—21 tinctures.

ALCOHOL, 45 PER CENT.—Tinct. Arnicae Florum, Cardamomi Com-

posita, Catechu, Cocci, Gentianæ Composita, Hamamelidis, Picrorhizæ, Quassia, Sennæ Composita, Stramonii,—11 tinctures.

Mixtures of Rectified Spirit with different proportions of water, represent the menstrua used in the following: Tinct. Ferri Perchloridi, Nucis Vomicae, Opii, Pruni Virginianæ,—4 tinctures.

Spirit of Ether is used in preparing Tinct. Lobeliae Æthereæ. Chloroform with Rectified Spirit in Tinct. Citharidini. Glycerin in Tinct. Cardamomi, Chloroformi et Morphinae Co., Kino, Pruni Virginianæ, Rhei Co. and Sennæ Co. Tincture of Orange is used in preparing Tinct. Quininae. Ether is used in preparing Tinct. Strophanthi, to dissolve and remove the valueless fixed oil which the drug contains. The Ammoniated Tinctures of Guaiacum and both Valerians are flavoured with the oils of lemon and nutmeg.

The Compound Tinctures are:—Tinct. Benzoini Co., Camphoræ Co., Cardamomi Co., Chloroformi et Morphinae Co., Cinchonæ Co., Gentianæ Co., Jalapæ Co., Lavandulae Co., Opii Ammoniata, Rhei Co., Sennæ Co.,—11 tinctures.

STRENGTHS.—There is an unnecessarily wide range in the strengths of tinctures, where greater uniformity should exist, and it is to be regretted, when viewed from the standpoint of the dispenser, that uniformity of strength has been sacrificed for uniformity of dosage.

Strength, 1 in 4, there are six tinctures; 1 in 5, twenty-one tinctures; 1 in 8, two tinctures; 1 in 10, twenty tinctures; 1 in $12\frac{1}{2}$, one tincture; 1 in 20, three tinctures; 1 in 30, two tinctures; 1 in 40, one tincture; 1 in 50, two tinctures; 1 in 10,000, one tincture; miscellaneous, three tinctures; there are ten standardized tinctures.

STANDARDIZED TINCTURES.—In order to ensure the presence of definite quantities of active constituents, the tinctures of certain alkaloidal and resinous drugs are submitted to prescribed methods of assay, and subsequently standardized. In some cases, they represent careful dilutions of concentrated standardized preparations.

DOSAGE.—By sacrificing uniformity of strength, the official tinctures have had their compositions changed to such an extent as to permit of greater uniformity of dose.

Thirty to sixty minims (2 to 4 mls), is the dose of all the official tinctures excepting the following:—

Five to Fifteen Minims (3 to 10 decimils):—Tinct. Belladonnæ, Cannabis Indicæ, Cantharidini, Capsici, Chloroformi et Morphine Composita, Cocci, Colchici, Daturæ Seminum, Digitalis, Ferri Perchloridi, Gebemii, Lobeliæ Æthereæ, Opii (20 to 30 min. for a single dose), Podophylli, Podophylli Indici, Scillæ, Stramonii, Urginæ,—17 tinctures.

Two to Five Minims (12 to 36 centimils):—Tinct. Aconiti, Iodi Mitis, Strophanthi,—3 tinctures.

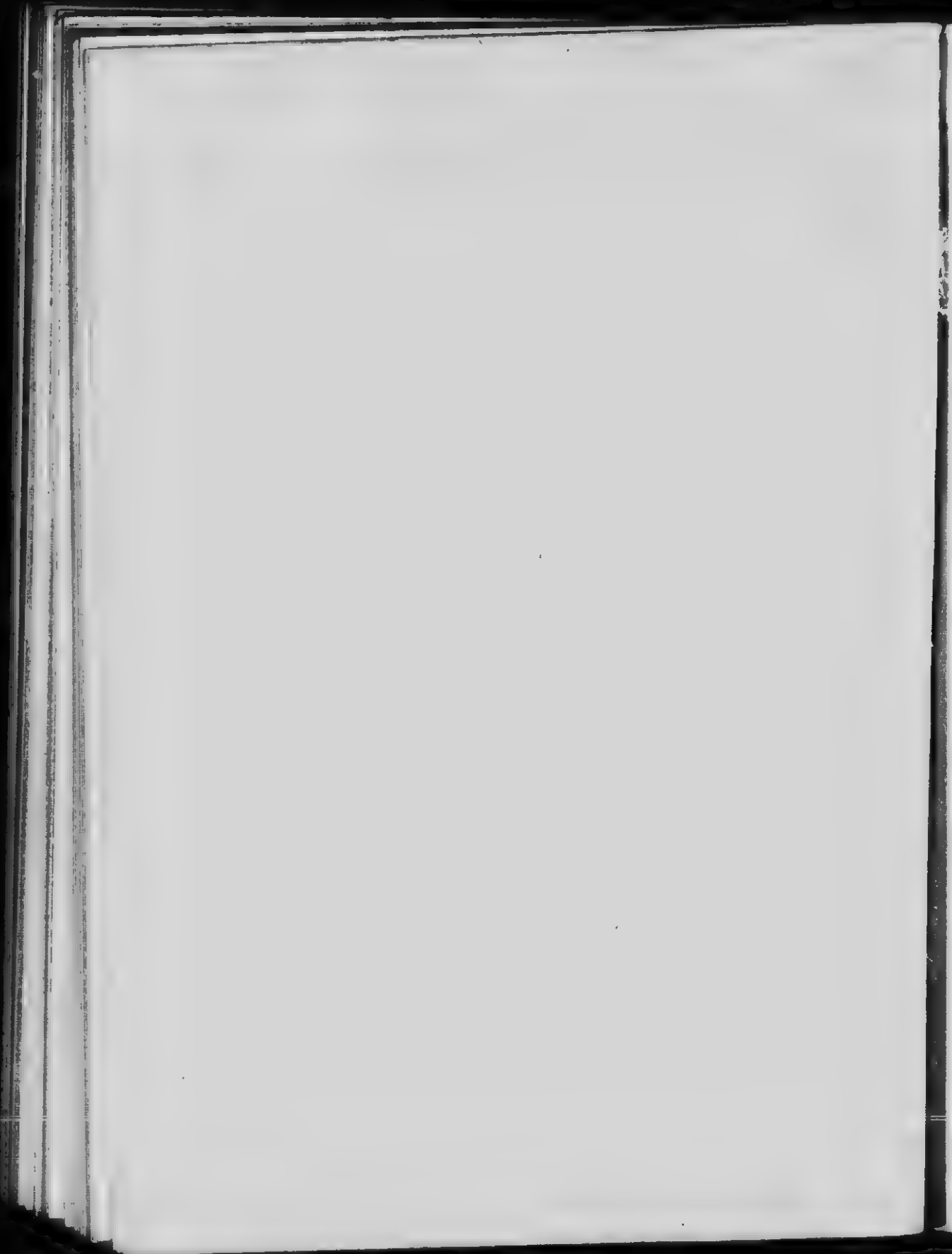
No dose is stated for either Tinct. Iodi Fortis or Tinct. Pyrethri, as these are intended for local or external application only.

Where two ranges of dosage are mentioned under Tinct. Opii, Rhei Composita, and Sennæ Composita, in the following classification, it must be understood that such tinctures may, with different objects, be administered either in a single dose (the maximum range), or by repeated doses (the minimum range).

UNOFFICIAL. *Tinct. Aloes and Myrrh.* (*Elixir proprietatis*). Represents one part each, of aloes, myrrh and glycyrrhiza in ten volumes; maceration with alcohol, 3, and water, 1; Dose, 30 to 60 minims. *Tinct. Capsicum and Myrrh.* (*Hot drops. Number six*). Represents capsicum, 1, and myrrh, 4, in 32; percolation with alcohol, 9, and water, 1; Dose, 10 to 40 minims. *Tinct. Deodorized Opium.* Made from opium deodorized by means of petroleum benzine; contains 1¼% of morphine; Dose, 5 to 20 minims. *Tinct. Ipecac and Opium.* (*Tinct. of Dover's powder*). Tincture of deodorized opium and fluid extract ipecac; contains 1¼% morphine and ¾% ipecac alkaloids; Dose, 5 to 20 minims. *Tinct. Aconite, Fleming.* Represents seven of aconite root in ten; percolation with alcohol; Dose, ½ to 2 minims. *Tinct. of Citro-Chloride of Iron.* (*Tasteless tinct. of ferric chloride.*) A protected iron preparation, containing the same proportion of ferric chloride as the official tincture; does not precipitate with alkalies nor blacken with tannins; devoid of acidity or astringency. Dose, 5 to 15 minims. *Tinct. Saponis Viridis Composita.* (*Compound Tinct. of green soap*). Contains soft soap, 15, and oil of cade, 2, dissolved in alcohol to make 100; for external use.

PRESERVATION.—Tinctures should be perfect solutions, and in order to keep them bright and the active constituents in permanent solution, evaporation of the volatile constituents must be prevented. They are best kept in tightly-stoppered bottles, in a room not subjected to great variations in temperature, and should not be exposed to direct sunlight. The size of containers should be adapted to the quantities likely to be used within a reasonable time.

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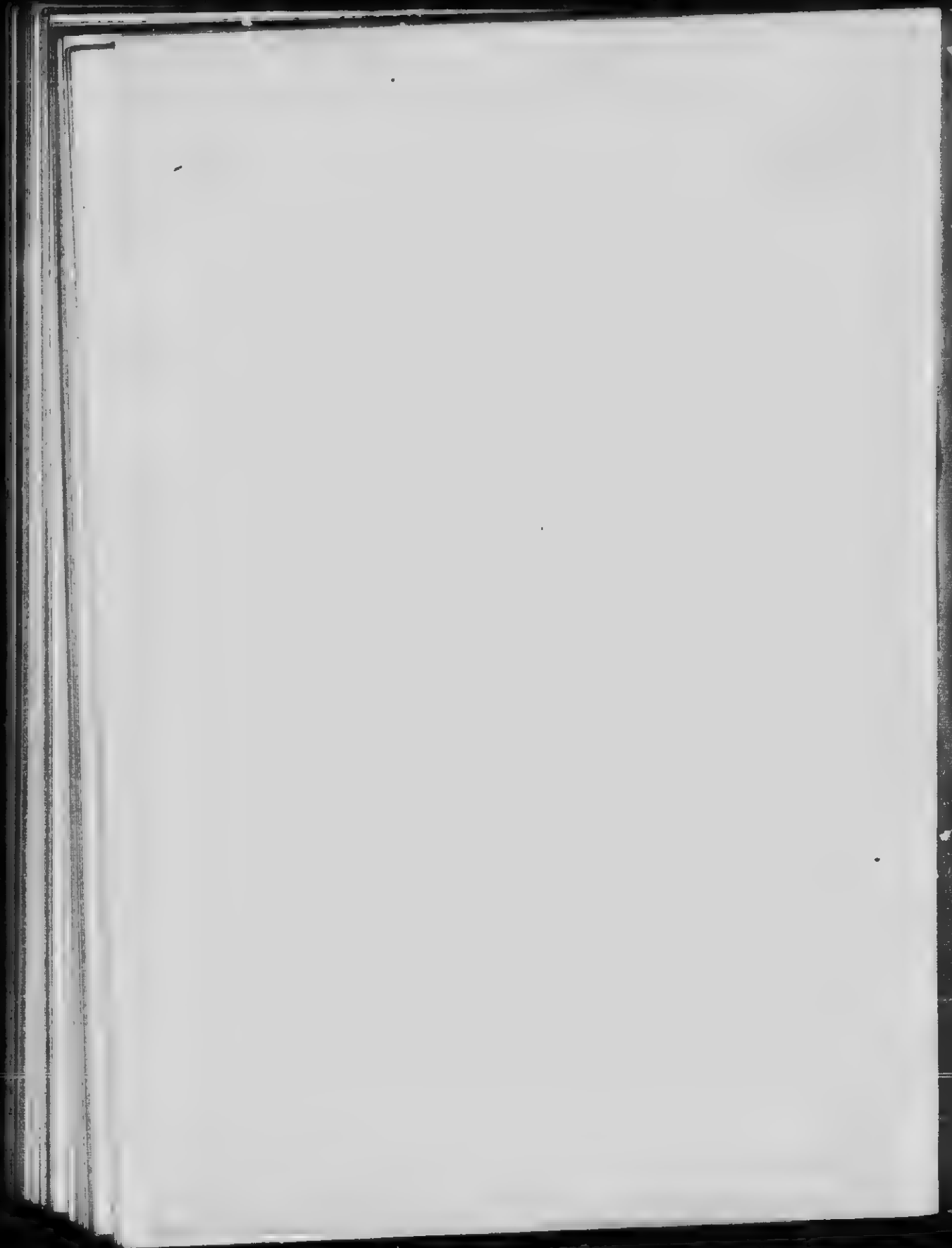
TINCTURÆ.

Seventy-one Official Tinctures

TITLES AND SYNONYMS.	CHIEF INGREDIENTS.	PROCESS.	MENSTRUUM. STRENGTH.	DOSE.
I.—THE STANDARDIZED TINCTURES.—TEN.				
CONTAINING STATED QUANTITIES OF ACTIVE PRINCIPLE				
<i>Tinctura:</i> Aconiti Tincture of Aconite. Tincture Monkshood. Tincture Wolfsbane.	Aconite Root, 40 powder.	Percolation and Standardization.	Alcohol, 70 p.c. 0.04 p.c. ether- soluble Alkaloids.	2 to 5 min. (2 to 30 d. mils).
Belladonnæ Tincture of Belladonna. Tincture of Belladonna Leaf.	Belladonna Leaves, 20 powder.	Repercolation and Standardization.	Alcohol, 60 p.c. 0.035 p.c. Alkaloids, or 7/200 gr. in 110 min.	30 to 60 min. (2 to 4 mils).
Camphoræ Composita Compound Tinct. of Camphor. Camphorated Tinct. of Opium. Paregoric Elixir. Tinctura Opii Benzoina.	Tincture Opium, Benzoic Acid, Oil of Anise, and Camphor.	Solution.	Alcohol 60 p.c. ½ gr. Opium in 1 fl. dr. 0.05 p.c. Morphine.	30 to 60 min. (2 to 4 mils).
Cinchonæ Tincture of Cinchona. Tincture of Peruvian Bark. Tincture of Red Bark.	Red Cinchona Bark, 40 powder.	Percolation and Standardization.	Alcohol 70 p.c. 1 p.c. total Alkaloids	30 to 60 min. (2 to 4 mils).
Cinchonæ Composita Compound Tinct. of Cinchona. Huxham's Tincture.	Tincture of Cinchona, Bitter Orange Peel, Serpentry and Cocchineal.	Maceration.	Alcohol 70 p.c. 1 Tincture in 2. 0.5 p.c. Alkaloids.	30 to 60 min. (2 to 4 mils).
Hydrastis Tincture of Hydrastis. Tincture of Goldenseal.	Liquid Extract of Hydrastis (containing 2 p.c. Hydras- tine).	Dilution.	Alcohol 60 p.c. 1 Liq. Ext. in 10. 0.2 p.c. Hydrastine.	30 to 60 min. (2 to 4 mils).
Jalapæ Tincture of Jalap.	Jalap. 40 powder.	Percolation and Standardization.	Alcohol, 70 p.c. 1.5 p.c. Resin.	30 to 60 min. (2 to 4 mils).

TINCTURÆ—Continued.

TITLES AND SYNONYMS.	CHIEF INGREDIENTS.	PROCESS.	MENSTRUUM. STRENGTH.	DOSE.
<i>Tinctura:</i> Nucis Vomica Tincture of Nux Vomica. Tinctura Strychni.	Liq. Ext. Nux Vomica.	Dilution.	R.S. (8) Water (3). 1 Liq. Ext. in 12. 1/8 p.c. Strychnine, 1/16 gr. in 1 fl. dr.	5 to 15 mins. (3 to 10 d. mils).
Opii Tincture of Opium. Laudanum. Tinctura Thebaica.	Opium. Macerated first with Warm Water, then after adding an equal vol. of Rectified Spirit.	Maceration and Standardization.	R.S. (1) Water (1) 1 p.c. Morphine.	5 to 15 mins. (3 to 10 d. mils).
Opii Ammoniata Ammoniated Tinct. of Opium. Scotch Paregoric.	Tincture Opium, Benzoic Acid, Oil of Anise and Solution of Ammonia.	Solution.	Alcohol 90 p.c. 1 Tr. Opium in 10. 0.1 p.c. Morphine.	30 to 60 mins. (2 to 4 mils).
II. 25 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 4 (SO-CALLED 25 PER CENT.)—Six.				
Aurantii Tincture of Orange. Tincture Fresh Orange Peel.	Fresh Bitter-Orange Peel.	Maceration.	Alcohol 90 p.c.	30 to 60 mins. (2 to 4 mils).
Daturæ Seminum Tincture of Datura Seeds.	Powd. Datura Seeds.	Percolation.	Alcohol 70 p.c.	5 to 15 mins. (3 to 10 d. mils).
Ergotæ Ammoniata Ammoniated Tincture Ergot. Alkaline Tincture Ergot.	Powdered Ergot.	Percolation.	Alcohol 60 p.c. (9). Sol. Ammonia (1).	30 to 60 mins. (2 to 4 mils).
Ferri Perchloridi Tincture Perchloride of Iron. Tincture Sesquichloride Iron. Tincture of Iron. Tincture of Steel.	Strong Solution of Ferric Chloride.	Admixture.	Alcohol 90 p.c. -(1). Water-(2).	5 to 15 mins. (3 to 10 d. mils).
Limonis Tincture of Lemon. Tincture of Fresh Lemon Peel.	Fresh Lemon Peel, cut small.	Maceration.	Alcohol 90 p.c.	30 to 60 mins. (2 to 4 mils).
Picrorhizæ Tincture of Picrorhiza. Tincture of Kali Kutki.	Bruised Picrorhiza rhizome.	Maceration.	Alcohol 45 p.c.	30 to 60 mins. (2 to 4 mils).



III. 40 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 5 (SO-CALLED 20 PER CENT.)—TWENTY.

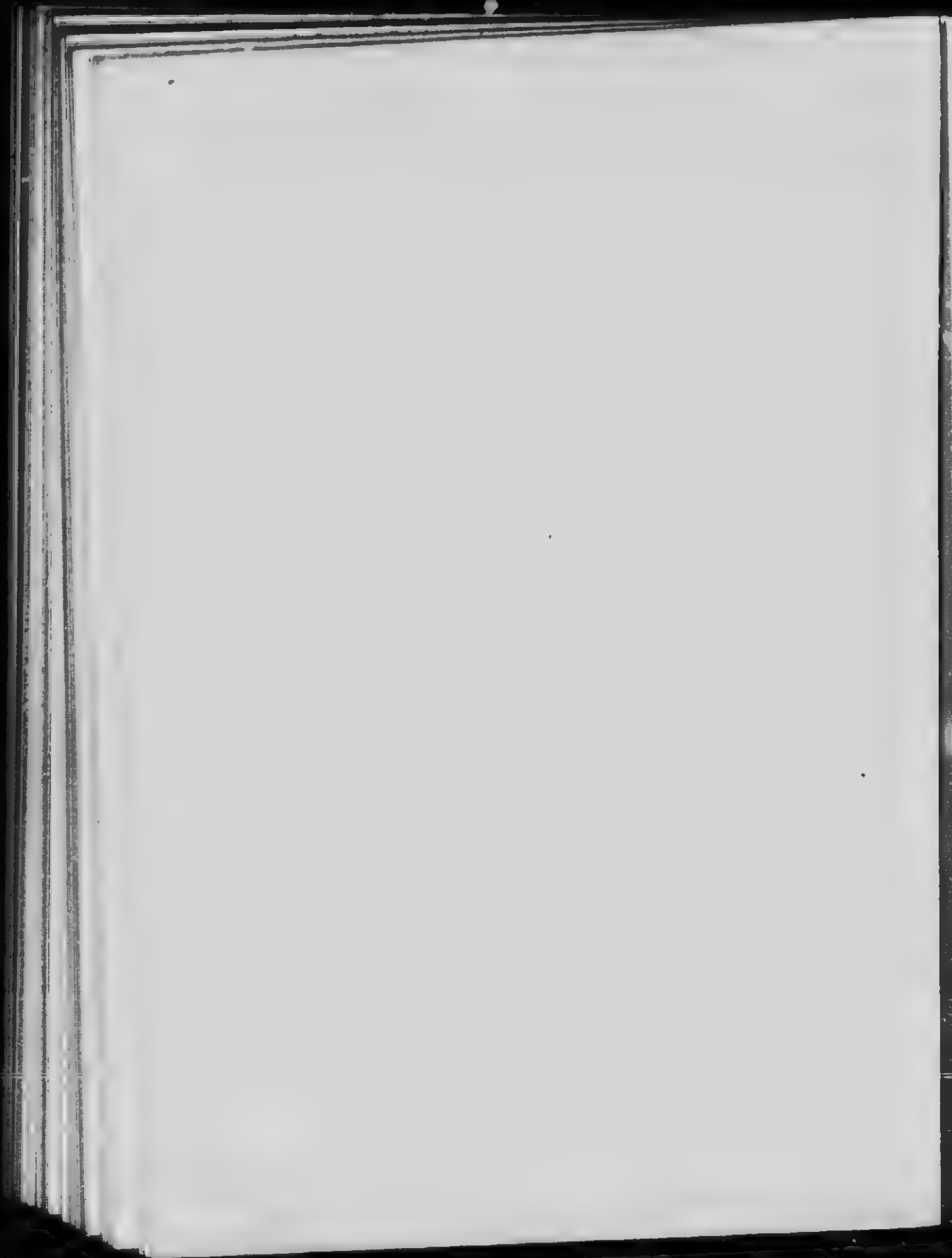
Aasafetida Tincture of Asafetida.	Gum-resin Asafetida, bruised.	Special Maceration.	Alcohol 70 p.c.	30 to 60 mins. (2 to 4 mils).
Buchu Tincture of Buchu.	Buchu Leaves, 20 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 mins. (2 to 4 mils).
Cascarilla Tincture of Cascarilla	Cascarilla Bark, 40 powder.	Percolation.	Alcohol 70 p.c.	30 to 60 mins. (2 to 4 mils).
Catechu Tincture of Catechu.	Powdered Catechu and Bruised Cinnamon Bark.	Maceration.	Alcohol 45 p.c.	30 to 60 mins. (2 to 4 mils).
Cinnamon Tincture of Cinnamon.	Cinnamon Bark, 40 powder.	Percolation.	Alcohol 70 p.c.	30 to 60 mins. (2 to 4 mils).
Cubebæ Tincture of Cubebæ.	Cubeb Fruits, 20 powder.	Percolation.	Alcohol 90 p.c.	30 to 60 mins. (2 to 4 mils).
Guaiaci Ammoniata Ammoniated Tinct. Guaiacum.	Resin Guaiacum, Oils Lemon and Nutmeg.	Maceration.	Alcohol 90 p.c. containing 8 p.c. Liq. Ammon. Fort.	30 to 60 mins. (2 to 4 mils).
Krameria Tincture of Krameria.	Krameria Root, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 mins. (2 to 4 mils).
Lobelia Tincture of Lobelia.	Lobelia Herb, 40 powder.	Percolation.	Spirit of Ether.	5 to 15 mins. (2 to 4 mils).
Myrrh Tincture of Myrrh.	Gum-resin Myrrh, coarse powder.	Special Maceration.	Alcohol 90 p.c.	30 to 60 mins. (2 to 4 mils).
Pruni Virginianæ Tincture of Virginian Prune.	Wild Cherry Bark, 20 powder, Water and Glycerin.	Special Maceration.	Alcohol 90 p.c.	30 to 60 mins. (2 to 4 mils).
Pyrethri Tincture of Pyrethrum.	Pyrethrum Root, 40 powder.	Percolation.	Alcohol 70 p.c.	External use.
Scilla Tincture of Squill.	Bruised Squill Bulbs.	Maceration.	Alcohol 60 p.c.	5 to 15 mins. (2 to 4 mils).
Senega Tincture of Senega.	Senega Root, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 mins. (2 to 4 mils).

TINCTURÆ—Continued.

TITLES AND SYNONYMS.	CHIEF INGREDIENTS.	PROCESS.	MENSTRUUM. STRENGTH.	DOSE.
<i>Tinctura:</i> Sennæ Composita Compound Tincture of Senna.	Senna leaflets, Caraway, Coriander and Glycerin.	Percolation.	Alcohol 45 p.c.	½ to 1 fl. dr. 2 to 4 fl. dra.
Serpentariæ Tincture of Serpentry. Tincture Virginian Snake-root.	Serpentary Rhizome, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 mins. (2 to 4 mds).
Stramonii Tincture of Stramonium.	Stramonium Leaves, 20 pow- der.	Percolation.	Alcohol 45 p.c.	5 to 15 mins. (3 to 10 d. mds).
Urginææ Tincture of Urginea. Tincture of Indian Squill.	Bruised Urginea Bulbs.	Maceration.	Alcohol 60 p.c.	5 to 15 mins. (3 to 10 d. mds).
Valerianæ Ammoniata Ammoniated Tincture Valerian.	Powd. Rhizome, Oils of Lemon and Nutmeg.	Maceration.	Alcohol 60 p.c.-(9). Sol. Ammonia-(1).	30 to 60 mins. (2 to 4 mds).
Valerianæ Indicæ Ammon. Ammon. Tinct. Indian Valerian.	Powd. Rhizome, Oils of Lemon and Nutmeg.	Maceration.	Alcohol 60 p.c.-(9). Sol. Ammonia-(1).	30 to 60 mins. (2 to 4 mds).
IV. 12.5 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 8 (SO-CALLED 12½ PER CENT.)—ONEZ.				
Alstoniæ Tincture of Alstonia. Tincture of Dita Bark.	Alstonia Bark, 20 powder.	Maceration.	Alcohol 60 p.c.	30 to 60 mins. (2 to 4 mds).
V. 10 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 10 (SO-CALLED 10 PER CENT.)—TWENTY.				
Arniciæ Florum Tincture of Arnica Flowers.	Arnica Flowers, 20 powder.	Percolation.	Alcohol 45 p.c.	30 to 60 mins. (2 to 4 mds).
*Benzoini Composita Compound Tincture Benzoin. Traumatic Elixir. Friars Balsam.	Benzoin, Storax, Tolu and Aloes.	Special Maceration.	Alcohol 90 p.c.	30 to 60 mins. (2 to 4 mds).

*Known also by the following synonyms: Balsamic Tincture, Jesuits' Balsam, Turlington's Balsam, Wade's Balsam, Vervain's Balsam, St. Victor's Balsam, Persian Balsam and Swedish Balsam. Intended to take the place of numerous preparations formerly employed under these titles.

Balsam, St. Victor a Balsam, a
employed under these titles.



Berberidis Tincture of Indian Berberis. Tincture of Ruot.	Berberis Stems, 60 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 mins. (2 to 4 mds).
Calumbæ Tincture of Calumba. Tincture of Columbo.	Calumba Root, 20 powder.	Maceration.	Alcohol 60 p.c.	30 to 60 mins. (2 to 4 mds).
Chiratae Tincture of Chiretta.	Chiretta, 40 powder.	Percolation.	Alcohol 60 p.c.	30 to 60 mins. (2 to 4 mds).
Cocci Tincture of Cochineal.	Cochineal, powdered.	Maceration.	Alcohol 45 p.c.	5 to 15 mins. (3 to 10 d. mds).
Colchici Tincture of Colchicum. Tincture of Meadow Saffron.	Colchicum Seeds, 30 powder.	Percolation.	Alcohol 70 p.c.	5 to 15 mins. (3 to 10 d. mds).
Digitalis Tincture of Digitalis. Tincture of Foxglove.	Digitalis Leaves, 20 powder.	Percolation.	Alcohol 70 p.c.	5 to 15 mins. (3 to 10 d. mds).
Gelsemii Tincture of Gelsemium. Tincture of Yellow Jasmine.	Gelsemium Root, 40 powder.	Percolation.	Alcohol 60 p.c.	5 to 15 mins. (3 to 10 d. mds).
Gentianæ Composita Compound Tincture Ger. Jan. Stoughton's Bitters. Stoughton's Elixir.	Gentian, Dried Bitter Orange Peel and Card- uus Sord.	Maceration.	Alcohol 45 p.c.	30 to 60 mins. (2 to 4 mds).
Hamamelidis Tincture of Hamamelis. Tincture of Witch Hazel.	Hamamelis Bark, 20 powder.	Percolation.	Alcohol 45 p.c.	30 to 60 mins. (2 to 4 mds).
Hyoscyami Tincture of Hyoscyamus. Tincture of Henbane.	Henbane Leaves, 20 powder.	Percolation.	Alcohol 70 p.c.	30 to 60 mins. (2 to 4 mds).
Iodi Fortis Strong Tincture of Iodine. Lincture of Iodine.	Iodine 10 p.c. and Potass. Iodide 6 p.c. dissolved in Water.	Solution.	Alcohol 90 p.c. 10 p.c. Iodine. 6 p.c. Potass. Iodide.	Externally only.
Kino Tincture of Kino.	Kino, powdered.	Special Maceration.	Glycerin 3, water 5, Alcohol 90 p.c., 10.	30 to 60 mins. (2 to 4 mds).

TINCTURÆ—Continued.

TITLES AND SYNONYMS.	CHIEF INGREDIENTS.	PROCESS.	MENSTRUUM. STRENGTH.	DOSE.
<i>Tincture:</i> Oliveri Corticis Tincture of Oliver's Bark. Tincture of Black Sassafras.	Oliver's Bark, 40 powder.	Percolation.	Alcohol 60 P.C.	30 to 60 minas. (2 to 4 mds).
Quassia Tincture of Quassia. Tincture of Bitter Wood.	Quassia Wood, rasped.	Maceration.	Alcohol 45 P.C.	30 to 60 minas. (2 to 4 mds).
Rhei Composita Compound Tincture Rhubarb. (Tincture Rhubarb, B. P. 1885.)	Rhubarb Root, 20 powd., Cardamom, Coriander and Glycerin.	Percolation.	Alcohol 45 P.C.	½ to 1 fl. dr. 2 to 4 fl. drs.
Strophanthi Tincture of Strophanthus.	Strophanthus Seeds, 30 pow- der. Ether.	Percolation.	Ether to extract oil before percolating with Alc. 70 P.C. Alcohol 90 P.C.	5 to 15 minas. (3 to 10 d. mds)
Tolutana Tincture of Tolu Balsam. Tolu Tincture.	Tolu Balsam.	Solution.	Alcohol 90 P.C.	30 to 60 minas. (2 to 4 mds).
Zingiberis Tincture of Ginger. "Oxley's Essence."	Ginger Rhizome, 40 powder.	Percolation.	Alcohol 90 P.C.	30 to 60 minas. (2 to 4 mds).
VI. 8 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 12½ (SO-CALLED 8 PER CENT.)—ONE.				
Jalapæ Composita Compound Tincture of Jalap.	Jalap, Scammony, Turpeth, each in powder.	Percolation.	Alcohol 60 P.C.	30 to 60 minas. (2 to 4 mds).
VII. 5 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 20 (SO-CALLED 5 PER CENT.)—THREE.				
Cannabis Indica Tincture of Cannabis Indica. Tincture of Indian Hemp.	Extract Indica amp.	Solution.	Alcohol 90 P.C.	5 to 15 minas. (3 to 10 d. mds).

Concise of Cannabis indica.
Tincture of Indian Hemp.

Capsici
Tincture of Capsicum.
Tincture of Cayenne Pepper.

Quillaiæ

Tincture of Quillaia.
Tincture of Soap Bark.

Capsicum Fructus, 30 powder.

Maceration.

Quillaia Bark, 20 powder.

Percolation.

Alcohol 60 p.c.

Alcohol 60 p.c.

5 to 15 mins.
(3 to 10 d. mtd).

30 to 60 mins.
(3 to 4 mtd).

VIII. 3.33 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 30 (SO-CALLED 3½ PER CENT.)—Two.

Podophylli

Tincture of Podophyllum.
Tincture Resin Podophyllum.

Podophylli Indici

Tinct. of Indian Podophyllum.
Tinct. Ind. Podophyllum Resin.

Podophyllum Resin.

Solution.

Indian-Podophyllum Resin.

Solution.

Alcohol 90 p.c.
2 grs. Resin in fl. dr.

5 to 15 mins.
(3 to 10 d. mtd).

Alcohol 90 p.c.
2 grs. Resin in fl. dr.

5 to 15 mins.
(3 to 10 d. mtd).

IX. 2.5 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 40 (SO-CALLED 2½ PER CENT.)—One.

Iodii Mitis

Weak Tincture of Iodine.
Mild Tincture of Iodine.

Iodine and Potass. Iodide,
each 2.5 p.c. dissolved in
water, then alcohol added.

Solution.

Alcohol 90 p.c.
2.5 p.c. Iodine.
2.5 p.c. Potassium
Iodide.

2 to 5 mins.
(12 to 30 c. mtd).

X. 2 GRAMS CHIEF INGREDIENT IN 100 MILLILITERS, OR 1 IN 50 (SO-CALLED 2 PER CENT.)—Two.

Quininae

Tincture of Quinine.

Quininae Ammoniatæ
Ammoniated Tincture Quinine.

Quinine hydrochloride.

Solution.

Quinine sulphate.

Solution.

Tincture of Orange.

30 to 60 mins.
(2 to 4 mtd).

Alcohol 60 p.c., (9).
Sol. Ammonia, (1).

30 to 60 mins.
(3 to 4 mtd).

XI. 0.1 GRAM CHIEF INGREDIENT IN 1 LITER, OR 1 IN 10,000. (0.01 PER CENT.)—One.

Cantharidini

Tincture of Cantharidin.
Tincture of Spanish Fly.

Cantharidin 0.1 gm.
Chloroform, 10 mls.
Alc. 90 p.c. to make 1 Liter.

Solution.

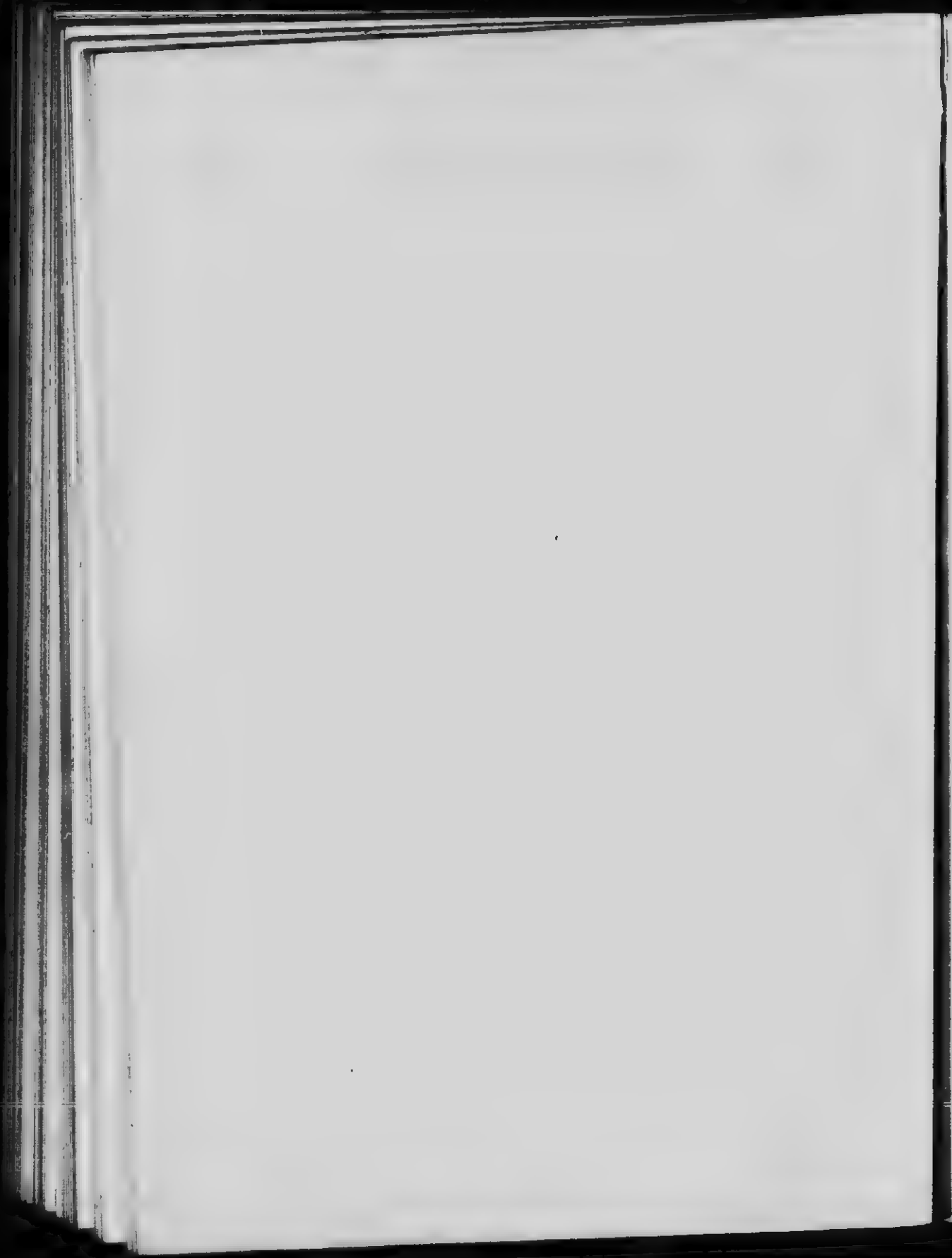
Chloroform and Al-
cohol, 90 p.c. (same
strength as Tr.
Cantharidis, B.P.
1898.

2 to 5 mins.
(12 to 30 c. mtd).

TINCTURÆ—Continued.

TITLES AND SYNONYMS.	CHIEF INGREDIENTS.	PROCESS.	MEASURED STRENGTH.	DOSE.
XII. MISCELLANEOUS.—THREE.				
Cardamomi Composita Comp. Tinct. of Cardamom.	Cardamom seeds Caraway, Cinnamon, Cochineal, and Glycerin.	Percolation.	Alcohol 45 p.c.	30 to 60 minis. (2 to 4 minis.)
*Chloroformi et Morphine Composita Compound Tinct. of Chloroform and Morphine. "Chlorodyne."	Chloroform, Morph. Hydro- chlor., Dil. HCN, Tinc- tures Capsicum and Indian Hemp, Oil of Peppermint.	Admixture. Solution.	Alcohol 90 p.c., (4). Glycerin, (1).	5 to 15 minis. (3 to 10 d. minis.)
Lavendulæ Composita Comp. Tincture of Lavender. Compound Spirit of Lavender. Lavender Drops.	Oils Lavender and Rose- mary, Cinnamon Bark, Nutmeg and Red Saun- ders.	Special Maceration.	Alcohol 90 p.c.	30 to 60 minis. (2 to 4 minis.)

*Compound Tincture of Chloroform and Morphine.—Each ten-minim dose contains: chloroform, 3-4 minims; morphine hydrochloride, 1-11 grains; diluted hydrocyanic acid, 1-2 minims; tincture capsicum, 1-4 minims; tincture indian hemp, 1 minim.



VINA. WINES. (MEDICATED).

Solutions of organic or inorganic medicinal substances in sherry or orange wine.

These preparations are analogous to the tinctures in many respects, but differ in menstrua, which contain a smaller and somewhat variable quantity of alcohol, together with extractive matter, potassium and calcium salts of tartaric acid, and a very small quantity of acetic acid. They possess no especially advantageous features over the ever-popular tinctures; the latter however, as a rule, contain more alcohol, and hence possess greater stimulating effect, which often interferes with the action of certain sedatives, expectorants, etc.; the odour and flavour of the wine at the same time serves to make these preparations more palatable.

PREPARATION.—By *macerating* the drug with wine, as in the Wines of Colchicum and Iron; or by *dissolving* the medicinal agent in the vinous menstruum, as in Arimonia Wine and Wines of Quinine and Citrate of Iron; or by *diluting* a specially prepared liquid extract with wine, as in Wine of Ipecacuanha.

MENSTRUUA.—The solvents employed in the official processes are Orange Wine and Sherry, neither of which should contain either sulphites or salicylic acid, which are frequently added to wines that are weak in alcohol, as preservative agents, but are not permissible in wines intended for medicinal uses. Any appreciable amount of tannin is objectionable if the wine is to be used with iron or other metallic salts; moreover tannin is incompatible with alkaloids; therefore, only detannated wine should be used as a menstruum for alkaloidal drugs.

Vinum Xericum (Sherry), is the chief menstruum, being used in the preparation of four official wines. It is a so-called *pale* wine, on account of its pale, yellowish-brown colour (or absence of red colour), due to the fermentation of grape juice without contact with the skins, stems and seeds. It should contain only traces of tannin, and not less than 16 per cent. of ethyl hydroxide, by volume. There should also be present not more than 0.1 to 0.2 per cent. of volatile acids, calculated as acetic acid, $\text{HC}_2\text{H}_3\text{O}_2$, or 0.3 to 0.45 per cent. of fixed acids, calculated as tartaric acid, $\text{H}_2\text{C}_4\text{H}_4\text{O}_6$, when tested by the official process.

Vinum Aurantii (Orange Wine), is the menstruum employed in preparing Wine of Citrate of Iron and Wine of Quinine. It is the product of the fermentation of a saccharine solution to which fresh bitter-orange peel has been added. It should contain 16 per cent. of ethyl hydroxide, by volume, should be but slightly acid to litmus, should not give reactions for salicylic acid, and but faint reactions for sulphites.

Unless the wine employed as menstruum contains the requisite proportion of ethyl hydroxide, the resulting medicated wine soon becomes rropy and sour, owing to acetic and mucous fermentations. It is, therefore, necessary to examine the wine quantitatively for spirit, and if deficient, enough alcohol should be added to yield the required percentage of ethyl hydroxide.

VINA.

Eight Official Wines (including the Unmedicated Wines).

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	PROCESS.	DOSE. REMARKS.
I. SIMPLE UNMEDICATED WINES.—TWO.				
<i>Vinum:</i> Aurantii Orange Wine. Xerici Sherry. Spanish Wine.	Saccharine Liquid and Fresh Bitter-Orange Peel. Grape juice.	15 to 17 p.c. ethyl hydroxide, (vol.). At least 16 p.c. ethyl hydroxide, (vol.).	Fermentation. Fermentation.	10 to 30 mins. Expectorant. 2 to 4 fl. dr. Emetic 1 to 4 fl. dr. (4 to 16 mils). 1 to 4 fl. dr. (4 to 16 mils).
II. REPRESENTING SOLUTIONS OF INORGANIC SALTS.—THREE.				
Antimonialæ Antimonial Wine. Tartar Emetic Wine. Ferri Iron Wine. Steel Wine.	Tartarated Antimony, Boiling Water and Sherry. Iron Wire, 50 grams, Sherry, 1000 mls.	1½ gr. in 1 fl. oz. or 1 in 250. Indefinite amount of Tartarated Iron. About 0.2 p.c. Iron w/v.	Solution. Maceration.	1 to 4 fl. dr. (4 to 16 mils).
Ferri Citratis Wine of Citrate of Iron.	Citrate of Iron and Ammonium and Orange Wine.	About 1 gr. in 1 fl. dr.	Solution.	1 to 4 fl. dr. (4 to 16 mils).
III. REPRESENTING SOLUTIONS OF PLANT-DRUG PRINCIPLES.—THREE.				
Colchici Colchicum Wine. Ipecacuanhæ Ipecacuanha Wine. Hippo Wine. Quininæ Quinine Wine.	Colchicum Corn., 20 powder, and Sherry. Liq. Ext. Ipecacuanha and Sherry. Quinine Hydrochloride and Orange Wine.	1 in 5. 1 Liq. Ext. in 20. 0.1 p.c. Ipecac. Alkaloids. 1 gr. in 1 fl. oz.	Maceration. Dilution. Solution.	10 to 30 mins. (6 to 18 d. mils). 10 to 30 mins. Expectorant. 4 to 6 fl. dr. Emetic. ½ to 1 fl. oz. (16 to 30 mils).

Quinine wine.

PART II.

SOLID PREPARATIONS OF THE BRITISH PHARMACOPŒIA.

ALKALOIDES. ALKALOIDS.

Mostly solid, crystallizable, colorless, nitrogenous principles of vegetable origin, representing the active principles of the plants producing them. Animal Alkaloids are termed *Ptomaines* and *Leucomaines*.

PROPERTIES.—Alkaloids are basic in character, have an alkaline reaction, unite with acids to form salts, have an univalent combining power and are destroyed when strongly heated.

COMPOSITION.—They all contain the elements, C., H., and N., and with few exceptions, O., as well, hence are *Compound Ammonias*; those containing no oxygen, are liquid and volatile, and are called *Amines*, while those having oxygen in their composition are *Amides*. Pyridine, C_5H_5N , is the parent substance of many alkaloids.

EXISTENCE.—They do not exist naturally in a free state, but as acid or neutral salts, combined with some common vegetable acid, as tannic, citric, malic, etc., or some acid peculiar to the plant, as Kinic (in Cinchona), Meconic (in Opium), Igasuric (in Nux Vomica), etc. These salts are known as *Native Alkaloidal Combinations* or "*Native Salts*."

SOLVENTS.—Free Alkaloids are, as a rule, insoluble in water, and differ among themselves as to their solubilities in the solvents immiscible with water, e.g., ether, chloroform, benzin, etc., while the alkaloidal salts are, with few exceptions, soluble in water or alcohol, but insoluble in the solvents immiscible with water.

INCOMPATIBLES.—Tannins, Picric Acid, Mercuric Chloride, Alkaline Oxides, Hydroxides or Carbonates, Lead Acetate and Subacetate, Iodides Bromides, etc., all of which are inclined to cause the precipitation of alkaloids from their solutions.

ALKALOIDS.

Twenty-seven Official Alkaloids (including the alkaloidal salts).

TITLES, SYNONYMS, CHEMICAL FORMULÆ.	SOURCES.	SOLUBILITIES.	MEDICINAL USES. DOSES.	OFFICIAL PREPARATIONS.
Aconitina Aconitine. $C_{34}H_{48}NO_{11}$.	Aconite Root (<i>Aconitum Napellus</i>).	Water, alm. insol., Alcohol, readily Ether, slightly Chlorof., readily	Externally: Anodyne. General Depressant.	Ointment, 2%.
Apomorphinæ Hydrochloridum Apomorphine Hydrochloride. $(C_{17}H_{17}NO_7 \cdot HCl) \cdot 2H_2O$.	Morphine Hydrochloride.	Water, alm. insol., Alcohol, 60 Ether, 50 Chlorof., readily	Powerful Emetic, 1-20 to 1-10 gr. hypoderm. 1-10 to 1-4 gr. per os.	Hypodermic Injection, 1%.
Atropina Atropine. $C_{17}H_{23}NO_3$.	<i>Atropa Belladonna</i> and other Solanaceous plants.	Water, Alcohol Ether, Chlorof., v.s. v.s. v.s.	Externally: Anodyne. Anæsthetic. Internally: Cardiac Stim., Antihydrotic, Nar- cotic, Mydriatic. Dose of each, 1-200 to 1-100 grains.	Ointment, 2%.
Atropinæ Sulphas Atropine Sulphate. $(C_{17}H_{23}NO_3) \cdot H_2SO_4$.	Atropine.	Water, Alcohol, 1 10	Local Anæsthetic. 1-3 to 1-2 grains.	Discs, 1/5000 gr. Solution, 1%.
Benzaminæ Lactas Benzamine Lactate. 'Eucaine Lactate.' 'Betacaine.'	Synthetic. Diactonamine on paraldehyde.	Water, Alcohol, 3 8		None.
Caffeina Caffeine. Theine. Guanine. $C_8H_{10}N_4O_2 \cdot H_2O$.	Tea leaves (<i>Camellia Thea</i>), Coffee seeds (<i>Coffea arabica</i>), etc.	Water, Alcohol, Chlorof., 1 1 1	Cerebral Stimulant. 1 to 5 grains. (6 to 30 c-grains).	Caffeine citrate, 50%.
Caffeinæ Citras Caffeine Citrate. $C_8H_{10}N_4O_7 \cdot H_3C_6H_5O_7$.	Caffeine and Citric acid, equal parts.	Water, Hot Water, 32 4	Cerebral Stimulant. 2 to 10 grains. (12 to 60 c-grains).	Effervescent Caffeine Citrate, 4%.
Cocaina Cocaine. $C_{17}H_{21}NO_4$.	Leaves of (<i>Erythroxylon Coca</i> , and its varieties).	Water, alm. insol., Alcohol, 10 Ether, 4 Chlorof., 0.5 Olive Oil, 24	Local Anæsthetic and Anodyne.	Ointment.

		24	
	Olive Oil		

Cocainæ Hydrochloridum Cocaine Hydrochloride. $C_{17}H_{21}NO_3 \cdot HCl$	Cocaine.	Water, Alcohol, Glyc.	0.5 4 4	Local Anesthetic and Anodyne. 1-10 to 1-4 grains. (6 to 16 m.grms.)	Hypo. Inj., 5%. Dietz, 1/50 gr. Comp. Lozenges 1/50 grains.
Codeina Codeine. $C_{18}H_{21}(CH_3)NO_3 \cdot H_2O$	Opium or Morphine.	Water, Alcohol, Ether, Chlorof., Water,	20 3 30 2 4	Anodyne, Sedative. 1-4 to 1 grain. (16 to 60 m.grms.)	Codeine Phos- phate.
Codeinæ Phosphas Codeine Phosphate. $C_{17}H_{19}(CH_3)NO_3 \cdot H_2PO_4 \cdot 2H_2O$	Codeine and phos- phoric acid.	Water,	4	Anodyne, Sedative. 1-4 to 1 grain. (16 to 60 m.grms.)	Syrup, 0.5%.
Diamorphinæ Hydrochloridum Diamorphine Hydrochloride. Diacetyl-morphine Hydrochloride. Heroinæ Hydrochlorid. $C_{17}H_{19}NO_3 \cdot HCl \cdot H_2O$	Acetic Anhydride on Morphine.	Water, Alcohol,	3 11	Anodyne, Sedative. 1/25 to 1/8 grain. (2.5 to 8 m.grms.)	None.
Homatropinæ Hydrobromidum Homatropine Hydrobromide. $C_{16}H_{23}NO_3 \cdot HBr$	Tropine (Decompo- sition product of atropine).	Water, Alcohol,	6 18	Mydriatic. 1-64 to 1-32 grain. (1 to 2 m.grms.)	Dietz, 1/1000 gr. each.
Hyoscinæ Hydrobromidum Hyoscine Hydrobromide. Scopolamine Hydrobromide. $C_{17}H_{21}NO_3 \cdot HBr \cdot 3H_2O$	Hyoscyamus, Scopolia, and other Solan- aceous plants.	Water, Alcohol, Ether, Chlorof., Water, Alcohol,	4 25 4. sol. 4. sol. 0.5 2.5	Hypnotic, Cerebral Sed. 1-100 to 1-100 grains. (0.3 to 0.6 m.grms.)	None.
Hyoscyaminæ Sulphas Hyoscyamine Sulphate. $(C_{17}H_{21}NO_3)_2 \cdot H_2SO_4 \cdot 2H_2O$	Hyoscyamus and other Solanaceous Plants.	Water, Alcohol,	0.5 2.5	Anodyne, Hypnotic. 1-200 to 1-100 grains.	None.
Morphinæ Acetas Morphine Acetate. $C_{17}H_{19}NO_3 \cdot HC_2H_3O_2 \cdot 3H_2O$	Morphine and acetic acid.	Water, Alcohol,	2.5 100	Anodyne, Sedative, Hypnotic, Narcotic. 1-8 to 1-3 grain.	Solution, 1%.
Morphinæ Hydrochloridum Morphine Hydrochloride. $C_{17}H_{19}NO_3 \cdot HCl \cdot 3H_2O$	Opium from <i>Papaver somniferum</i> .	Water, Water, boiling, Alcohol,	25 1 50	Anodyne, Sedative, Hypnotic, Narcotic. 1-8 to 1-2 grain.	Solution, 1%. Suppos., 1/5 gr. 2 Loz. 1/12 gr. Tinct. Chlorof. et Morph. Co.
Morphinæ Tartras Morphine Tartrate. $(C_{17}H_{19}NO_3)_2 \cdot H_2C_2H_4O_6 \cdot 3H_2O$	Morphine and tartaric acid.	Water, Alcohol,	11 ap. sol.	Anodyne, Sedative, Hypnotic, Narcotic. 1-8 to 1-2 grain.	Hypodermic Inj., 2 1/2 %. Solution, 1%.

ALKALOIDS—Continued.

Pelletierinæ Tannas Pelletierine Tannate. Punicine Tannate. A mixture of Alkaloidal Tannates.	Pomegranate bark (<i>Punica granatum</i>).	Water, Alcohol, Ether.	d. sol. more sol. 300	Anthelmintic, Tricuffage. 2 to 8 grains. (2 to 50 m.grams).	None.
Physostigminæ Sulphas Physostigmine Sulphate. Eserine Sulphate. ($C_{10}H_{12}N_2O_3$) \cdot H_2SO_4 .	Calabar bean (<i>Physostigma venenosum</i>).	Water, Alcohol.	v. sol. v. sol.	Spinal Sedative, Myotic. 1-64 to 1-32 grain. (1 to 2 m.grams).	Dose, 1/1000 gr. each.
Pilocarpinæ Nitrates Pilocarpine Nitrate. $C_{11}H_{15}N_2O_2 \cdot HNO_3$.	Jaborandi leaves (<i>Pilocarpus microphyllus</i> and other Species).	Water, Alcohol.	8 d. sol.	Diaphoretic, Diuretic, Myotic. 1-20 to 1-5 grains. (3 to 12 m.grams).	None.
Quininæ Hydrochloridum Quinine Hydrochloride. $C_{20}H_{24}N_2O_7 \cdot HCl \cdot 2H_2O$.	Cinchona and Remijia barks.	Water, Alcohol, Chlorof.	36 2 9	Tonic, Antipyretic, Anti- periodic. 1 to 10 grains. (6 to 60 c.grams).	Tincture, 5% Wine, 2 grs. in 1 fl. oz.
Quininæ Hydrochlor. Acidum Acid Quinine Hydrochloride. $C_{20}H_{24}N_2O_7 \cdot 2HCl$.	Cinchona and Remijia barks.	Water.	about 1	Tonic Antipyretic, Anti- periodic. 1 to 5 grains.	None.
Quininæ Sulphas Quinine Sulphate. ($C_{20}H_{24}N_2O_7$) \cdot $H_2SO_4 \cdot 15H_2O$.	Cinchona and Remijia barks.	Water, Alcohol, Chlorof., Glycerin.	800 65 680 40	Tonic, Antipyretic, Anti- periodic. 1 to 10 grains.	Tr. Q. Aqua. 5% Pil. Q. 5% Syr. Triple Phos. 4-5 gr. in 1 fl. oz. Fe et Q. Cit. 15% Syr. Triple Phos. 1/32 gr. in 1 fl. oz.
Strychnina Strychnine. $C_{15}H_{15}N_2O_2$.	Seeds of Nux-vomica and other species of <i>Strychnos</i> .	Water, Alcohol, Chlorof.	6700 150 6	Tonic, Spinal Stimulant. 1-64 to 1-16 grain.	Solution, 1%.
Strychninæ Hydrochloridum Strychnine Hydrochloride. $C_{15}H_{15}N_2O_2 \cdot HCl \cdot 2H_2O$.	Strychnine and Hydrochloric Acid.	Water, Alcohol.	60 60	Tonic, Spinal Stimulant. 1-64 to 1-16 grain. (2 to 4 m.grams).	None.
Theobrominæ et Sodii Salicylatis Theobromine and Sodium Salicylate. 'Diuretin'. $C_7H_7(CH_3)_2N_2O_2 \cdot C_6H_4(OH)CO_2Na$.	Alkaloid from Cacao beans (<i>Cacao theobroma</i>) combined with sodium salicylate.	Water, Alcohol, Ether, Chlorof.	3 v. sol. ins. ins.	Cardiac Tonic, Diuretic. 10 to 20 grains.	None.

$C_4H_9(CH_2)_3N(O^-)C_2H_4(OH)CO_2Na^+$

CHARTÆ. PAPERS. (MEDICATED PAPERS).

Pieces of unsized or cartridge-paper, impregnated with a medicating substance. There are no official medicated papers.

Medicated papers are made by (1) dipping sheets of unsized paper in a solution of the active substance, and then exposing to warm air until dry; or (2) by applying the medicating mixture in a thin film, upon one side of cartridge-paper, and drying by exposure to air.

MANNER OF USING.—Some are ignited, and the fumes given off while burning, inhaled (*Charta potassii nitratis*), or allowed to permeate the atmosphere of the room for the purpose of fumigation (*Charta odoriferi*). Some are employed in chemical analysis, as indicators, to show the presence of acids, alkalis, or other chemical substances (*Chartæ lacmi, curcumæ, plumbi acetatis, cupri sulphatis*, etc.), and are simply brought into contact with the solution or vapor of the substance to be tested. Others are for external application to the skin for the purpose of producing irritation or counter-irritation, as *Chartæ sinapis, cantharidis vel epispastica*, as well as certain of the so-called "corn-plasters" containing verdigris, formerly known as *Sparadraps*.

CHARTA SINAPIS. Mustard Paper. (*Papier moutarde. Sinapism*). Made by percolating a mixture of equal parts of ground black and white mustard seeds with benzol. The oil-free residue is dried, powdered and mixed with solution of India-rubber (*caoutchouc*), the semi-liquid mixture spread on one side of a piece of cartridge-paper and dried by exposure to air. Before it is applied to the skin, mustard paper should be dipped in warm water for about fifteen seconds, and when it is desired to modify the action, a piece of thin gauze may be placed next to the skin.

Note.—The glucosidal sinigrin in the black mustard is insoluble in benzol and hence when the fixed oil has been removed, the water penetrates the particles of mustard more readily, and facilitates the hydrolysis of the glucoside by the ferment (*myrosin*), with the production of the pungent volatile oil.

CONFECTIONES. CONFECTIONS. (PRESERVES).

Soft solids, in which one or more powdered medicinal substances have been incorporated with syrup, sugar, or honey, with the object of rendering them palatable and preserving them from change. They are intended to

be swallowed without further preparation, and overcome the difficulty of administering bulky powders. The confections represent an ancient class of preparations, fast becoming obsolete, and sometimes referred to by the terms, *Conserve* and *Electuary*.

CONSERVES are preparations made by incorporating moist drugs with dry sugar, and ELECTUARIES by mixing dry, powdered drugs with moist saccharine substances, as honey, pulps, syrups, etc.

Note.—The declining use of confections in medical treatment may, in the case of plant-drugs, be traced to the increasing use of active principles or concentrated preparations, in the place of the whole drug in the form of powder, and an increased knowledge of the active principles of drugs has rendered superfluous the ingestion of inert vegetable tissue.

CONFECTIONES.

Four Official Confections.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTHS.	DOSES.
<i>Confectio:</i> Piparis Confection of Pepper. Ward's Paste.	Black pepper, caraway and purified honey.	1 in 10.	60 to 120 gra. (4 to 8 grams).
Rosæ Gallicæ Confection of Roses.	Fresh red-rose petals and sugar.	1 in 4.	Pill Excipient in Pil. Hy- dragryri.
Sennæ Confection of Senna. Lenitive Electuary.	Senna, coriander, figs, tamarinds, cassia-pulp, prunes, ext. liquorice, sugar and water.	1 in 10.	60 to 120 gra. (4 to 8 grams).
Sulphuris Confection of Sulphur.	Precip. sulphur, potassium bitartrate, tinct. orange, syrup, glycerin and pow- dered tragacanth.	4½ in 10.	60 to 120 gra. (4 to 8 grams).

EMPLASTRA. PLASTERS.

Solid, tenacious preparations for external use only; they are harder than ointments, but become flexible and adhesive at the temperature of the body, and require heat to spread them. Plasters can be made to serve the double purpose of offering both support and medication to the parts to which they are applied.

Increased local circulation also results as the direct action of the plaster-base itself, partly by increased warmth and partly by the local stimulating effect of its resinous and waxy constituents.

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PREPARATION.—They are prepared by incorporating medicinal substances with plastic bases, as Lead Plaster, Resin Plaster, gum-resins, or resins, and are then spread evenly on sheep-skin, chamois-skin, kid-skin, linen, or adhesive-plaster.

The Official Plasters are prepared in the form of rolls or cylinders of convenient diameter, weighing from four to eight ounces, by rolling, (after dipping into warm water to soften them), on a stone- or glass-slab, previously moistened with water, and the resulting rolls are then tightly wrapped in waxed paper to protect them from the air. Unless kept from direct contact with air, the plaster-mass becomes hard and brittle and does not melt readily, or when melted, does not give the homogeneous mass essential to the preparation of a uniformly spread plaster having a smooth surface, whether spread by means of a plaster-iron, or otherwise.

ALTERNATIVE.—Where prevailing high temperatures render the specified basis too soft for convenient use, the B.P. sanctions the employment of more or less soap, resin, or beeswax, provided the official proportion of medicament be maintained. Peanut- or Benne-Oil may also be used instead of Olive Oil.

UNOFFICIAL.—Most of the plasters in common use are prepared in large manufactories and contain Caoutchouc combined with certain aromatic resins (Olibanum, Burgundy Pitch, Rosin, etc.); they are spread on suitable fabric by machinery and are ready for use. As these are preferred on account of their marked adhesiveness and flexibility, the pharmacist is only occasionally called upon to spread other than Cantharides Plaster.

The India-rubber base admits of ready incorporation with numerous medicating principles, and possesses many important advantages over the ordinary lead-plaster and resinous bases.

Notes.—The plasters which formerly contained cantharides are now directed to be made with cantharidin, the glucosidal active principle of *Cantharis* (spanish beetle) and *Mylabris* (chinese beetle), and the B.P. states that these preparations contain approximately the same proportions of cantharidin as the corresponding preparations of the 1898 edition, but pharmacists will, undoubtedly, continue to use the 1898 formula, and label the products accordingly, as the 1914 edition furnishes no method for preparing the glucoside, which, as found in commerce, is variable and uncertain, and does not furnish as satisfactory a plaster as may be obtained by the use of either *cantharis* or *mylabris*.

EMPLASTRA.

Eight Official Plasters.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTHS.
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I. PLASTERS HAVING MISCELLANEOUS BASES.—TWO.

<i>Emplastrum:</i> Menthol Menthol Plaster.	Menthol, yellow beeswax and resin.	15 p.c. Menthol.
Cantharidini Cantharidin Plaster. Blister Plaster. Emplastrum Lytta.	Cantharidin, yellow beeswax, chloroform and wool-fat.	0.2 p.c. Cantharidin.

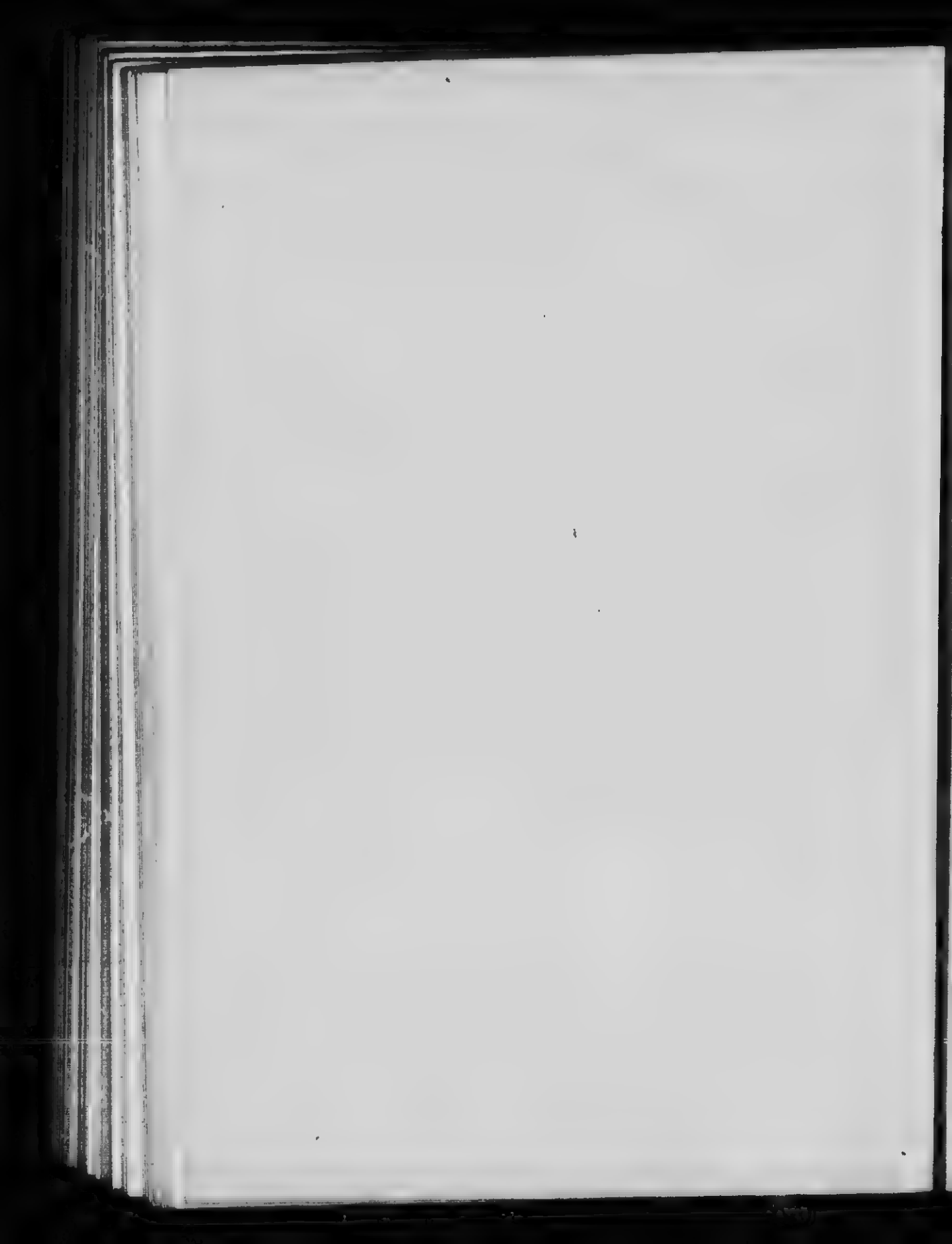
II. THOSE HAVING A LEAD-PLASTER BASIS.—FOUR.

Hydrargyri Mercurial Plaster.	Mercury, olive oil, sublimed sulphur and lead plaster.	About 33 p.c. Mercury.
Plumbi Lead Plaster. Diachylon Plaster. Litharge Plaster.	Lead oxide, olive oil and water.	Abt. 100 p.c. Lead Oxide.
Resinae Resin Plaster. Adhesive Plaster.	Resin, hard soap and lead plaster.	10 p.c. resin.
Saponis Soap Plaster.	Hard soap, resin and lead plaster.	14 p.c. Hard Soap.

III. THOSE HAVING A RESIN-PLASTER BASIS.—TWO.

Belladonnae Belladonna Plaster.	Liquid extract belladonna and resin plaster.	0.25 p.c. Bellad. Alkalo.
Calefaciens Warming Plaster. Warm Plaster.	Cantharidin, chloroform, olive oil, water and resin plaster.	0.02 p.c. Cantharidin.

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EXTRACTA. EXTRACTS.

Preparations representing the medicinal principles of plant-drugs together with extractive, obtained in the form of a solution and evaporated or distilled to a solid or semi-solid consistence.

PREPARATION.—The medicinal principles may be obtained in the form of solution, either by forcibly expressing the crude drugs while in their fresh and succulent state, and collecting the juice; or by exhausting the dried and powdered drugs with appropriate menstrua. The resulting solutions are concentrated by evaporation under proper conditions, or by distillation (if alcohol has been employed as the menstruum), for the purpose of recovering the costly alcohol, at the temperature of the water-bath, or lower, in cases where that temperature would be destructive to any of the plant constituents.

FRESH, GREEN EXTRACTS OR INSPISSATED JUICES.—If the crude drug represents a portion of the plant which contains Chlorophyll (green colouring matter), this principle is retained in the finished product, as it gives to extracts a better consistence than they would otherwise have, and keeps them in better condition. Albumin, if present, promotes decomposition, and hence is rejected. Whenever it is possible to do so, starch is rejected for the same reason.

PREPARATION OF GREEN EXTRACTS, IN WHICH THE CHLOROPHYLL IS RETAINED.—The fresh drug is bruised in a stone mortar, forcibly expressed, and the juice gradually heated to 54° C. (130° F.) to coagulate the Chlorophyll, which is collected by straining through muslin, and reserved. The clear filtrate is then heated to 93° C. (200° F.), to coagulate albuminous matter, and again strained to remove the Albumin, which is rejected. By means of a water-bath, the juice is evaporated to a syrupy consistence, and the reserved Chlorophyll, which has been previously subdivided by passing through a hair sieve, is then incorporated with it. Evaporation below 60° C. (140° F.) follows, with vigorous stirring, until it is of the required consistence, a soft extract. The Green Juice-Extracts are not now official.

PROCESS WHEN CHLOROPHYLL IS ABSENT.—Bruise, express and allow the juice to deposit the feculence (*starchy matter or inulin*); heat the clear liquid to 100° C. (212° F.), to coagulate Albumin, which is removed by straining, and the colature evaporated at 71° C. (160° F.), to a soft pitular consistence.

OTHER PROCESSES.—The various processes involved in the preparation of the remaining official extracts include infusion, decoction, percolation, distillation and evaporation.

CONSISTENCE OF EXTRACTS.—Dependent upon whether the extract has hygroscopic properties or tends to lose moisture. As a rule, it is desirable to reduce the solution to that condition which leaves little tendency to absorb moisture by ordinary keeping, and become soft, or lose moisture and become hard, dry and brittle.

Those prepared as *Soft Extracts*, are:—Extracts of Cannabis Indica, Colchicum, Ergot, Gentian, Glycyrrhiza, Taraxacum—6 extracts

Dry Extracts (not powdered) are:—Extracts of Aloes, Cascara Sagrada, Krameria, Rhubarb—4 extracts.

Dry Extracts (powdered) are:—Extracts of Belladonna, Compound Colocynth, Euonymus, Hyoscyamus, Nux Vomica, Opium, Strophanthus—7 extracts.

Note.—The designation "Siccum" is used only in the titles of dry extracts when *liquid* extracts are also prepared from the same source, viz.:—Extractum Belladonnæ Siccum, Extractum Cascaræ Sagradæ Siccum, Extractum Nucis Vomicae Siccum, Extractum Opii Siccum—4 extracts. Dry extract of belladonna is therefore designated "Siccum," because there is also an official liquid extract of belladonna, but the dry extract of hyoscyamus is simply styled Extractum Hyoscyami, because there is no official liquid extract from this drug; an uncalled for discrimination in the use of the word *Siccus*, which simply means *dry*.

STANDARDIZED EXTRACTS.—The following preparations are made to contain specified quantities of active constituents, by being prepared from drugs or preparations previously assayed or standardized, or are themselves directly assayed and then standardized, they are:—

Extractum Belladonnæ Siccum.—Prepared from previously assayed powdered belladonna leaves by percolation with Alcohol, 70 p.c., assaying the percolate, and by evaporation and the addition of powdered belladonna leaves, standardized to yield a powdered extract containing 1% of alkaloids.

Extractum Hyoscyami.—Prepared from assayed powdered hyoscyamus leaves by percolation with Rectified Spirit, and proceeding as

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directed under Ext. Bellad. Siccum; then adding powdered hyoscyamus leaves to yield a powdered extract containing 0.3% of alkaloids.

Extractum Nucis Vomice Siccum.—Prepared from Liquid Extract of Nux Vomica, which is concentrated by distillation, assayed, and standardized by the addition of calcium phosphate, to yield a powdered extract containing 5% of strychnine.

Extractum Opii Siccum.—Prepared from sliced opium by maceration with water; the macerate is assayed, evaporated and standardized by the addition of calcium phosphate, to yield a powdered extract containing 20% of anhydrous morphine.

Extractum Strophanthi.—Prepared from powdered strophanthus seeds, which are percolated with ether to remove fixed oil; the marc is then dried and percolated with rectified spirit; the percolate is concentrated by evaporation and powdered milk sugar added, to yield a powdered extract representing twice the weight of the strophanthus seeds.

DOSAGE.—In order to reduce considerably the great variations formerly existing in the doses of extracts, they have been prepared that the majority of them may be given in doses of $\frac{1}{2}$ grain, or 2 to 8 grains. This uniformity of dosage has become possible, in several instances, through the addition of calcium phosphate and milk sugar before completing the extract. The following have doses of $\frac{1}{2}$ grain (16 to 60 m.grams)—Belladonnæ Siccum, Cannabis Indicæ Siccum, Nucis Vomice Siccum, Opii Siccum, Strophanthi, and 2 present in 1 powdered drug—6 extracts.

1 to 2 grains (6 to 12 c.grams)—Euonymi. 1 to 4 grains (6 to 25 c.grams).—Aloes.

2 to 8 grains (12 to 50 c.grams).—Cascariæ Sagradæ Siccum, Colocynthis Comp., Ergotæ, Gentianæ, Hyoscyami, Rhei—6 extracts.

5 to 15 grains (3 to 10 d.grams).—Kramerizæ, Taraxaci, Fel Bovinum Purificatum—3 extracts.

PRESERVATION.—Extracts should be stored in a cool, dry place, in well-covered jars; the dry or powdered extracts preferably in stoppered bottles, as they are inclined to cake in moist atmospheres.

EXTRACTA.

Eighteen Official Extracts.

TITLES AND SYNONYMS.	INGREDIENT.	PROCESS.	MEASURE. REMARKS.	DOSE. CONSISTENCE.
CLASS I. JUICE EXTRACTS.—TWO.				
<i>Extractum:</i> Colchici Extract of Colchicum.	Fresh colchicum cornea.	Expression, separation of feculence, and evaporation.	Strength: 5 in 1.	$\frac{1}{4}$ to 1 gr. Soft Extract.
Taraxaci Extract of Dandelion.	Fresh root, crushed.	Expression, separation of feculence, and evaporation.	Strength: 12 in 1.	5 to 15 grs. Soft Extract.
CLASS II. AQUEOUS OR WATERY EXTRACTS.—SEVEN.				
<i>Group (a). THOSE MADE WITH HOT WATER.—ONE.</i>				
Aloes Extract of Aloes.	Aloes in small fragments.	Infusion and evaporation.	Boiling Water.	1 to 4 grs. Dry Extract.
<i>Group (b). THOSE MADE WITH COLD WATER.—SIX.</i>				
Cascarae Sagradae Siccum Dry Extract Cascarae Sagradae. Extractum Rhamni Purshianae.	Cascara sagrada bark, 20 powder.	Percolation and evaporation.	Water.	2 to 8 grs. Dry Extract.
Ergotae Extract Ergot. Ergotin.	Crushed ergot and alcohol, 90 p.c.	Maceration, purification, evaporation.	Water.	2 to 8 grs. Soft Extract.
Gentianae Extract of Gentian.	Gentian root.	Cold infusion, decoction and evaporation.	Water.	2 to 8 grs. Soft Extract.

EXTRACTA—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	PROCESS.	MEASURE. REMARKS.	DOSE. CONSISTENCE.
<i>Extractum:</i> Glycyrrhizæ Extract of Liquorice.	Liquorice root, 20 powder.	Maceration and evaporation.	Chloroform-water.	<i>Ad libitum.</i> Soft Extract.
Kramerizæ Extract of Rhatany.	Rhatany root, coarse powder.	Percolation.	Water.	5 to 15 grs. Dry Extract.
Opii Siccum Dry Extract of Opium.	Sliced opium and calcium phosphate.	Maceration, evaporation and standardization.	Cold Water. 20 p.c. Morphine.	$\frac{1}{4}$ to 1 gr. Powd. Extract.
CLASS III. ALCOHOLIC EXTRACTS.—EIGHT.				
<i>Group (a). MADE BY EVAPORATION OF STANDARDIZED LIQUID EXTRACTS.—ONE.</i>				
Nucis Vomizæ Siccum Extract of Nux Vomica. Extractum Strychni.	Liquid extract nux vomica and calcium phosphate.	Distillation, evaporation and standardization.	Alcohol, 70 p.c. 5 p.c. Strychnine.	$\frac{1}{2}$ to 1 gr. Powd. Extract.
<i>Group (b). THOSE MADE BY PERCOLATION OR MACERATION.—SEVEN.</i>				
Belladonnæ Siccum Dry Extract of Belladonna. Alcoholic Extract Belladonna. Extractum Belladonnæ.	Belladonna leaves, 40 powder.	Percolation, evaporation and standardization.	Alcohol, 70 p.c. 1 p.c. Alkaloids.	$\frac{1}{4}$ to 1 gr. Powd. Extract.
Cannabis Indicæ Extract of Indian Hemp.	Indian hemp, coarse powder.	Percolation and evaporation.	Alcohol, 90 p.c.	$\frac{1}{4}$ to 1 gr. Soft Extract.
Colocynthis Compositum Comp. Ext. of Colocynthis.	Colocynthis pulp, ext. aloes, resin scammony, curd soap, powd. cardamoms.	Maceration, distillation and evaporation.	Alcohol, 60 p.c.	2 to 8 grs. Powd. Extract.

EXTRACTA—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	PROCESS.	MENSTRUUM. REMARKS.	Dose. Consistence.
<i>Extradium:</i> Euonymi Extract Euonymus. Extract Wahoo.	Root-bark—20 powder and calcium phosphate.	Percolation, evaporation and pulverization.	Alcohol, 45 p.c.	1 to 2 grs. Powd. Extract.
Hyoscyami Extract of Hyoscyamus. Extract of Henbane.	Henbane leaves, 40 powder.	Percolation, evaporation and standardization.	Alcohol, 70 p.c.	¼ to 1 gr. Powd. Extract.
Rhei Extract of Rhubarb.	Rhubarb root, 20 powder.	Percolation and evaporation.	Alcohol, 60 p.c.	2 to 8 grs. Dry Extract.
Strophanthi Extract of Strophanthus.	Seeds—30 powder, and milk sugar; ether (to remove fixed oil).	Percolation, evaporation and standardization.	Alcohol, 90 p.c. Strength, 1 in 2.	¼ to 1 gr. Powd. Extract.
CLASS IV. MISCELLANEOUS.—ONE.				
Fel Bovinum Purificatum Purified Ox Bile. Purified Ox Gall. Extract of Ox Gall.	Fresh Ox Bile and Alcohol. 90 p.c.	Purification, distillation and evaporation.	Alcohol, 90 p.c.	1 to 15 grs. Firm Extract.

LAMELLÆ DISCS.

The official discs are composed of a glycerin-gelatin basis, with alkaloidal medicaments. Used almost exclusively in ophthalmic practice for desired effect upon the pupil or conjunctiva. Being very thin, they are readily inserted between the eye-ball and lid.

PREPARATION.—Made by pouring a specified quantity of a warm concentrated medicated solution of gelatin containing glycerin, upon a sheet of plate glass, 10 centimetres square, previously thinly coated with white beeswax; the film obtained, after drying at a temperature not exceeding 36° C. (97° F.), is cut into discs, 3 millimeters ($\frac{1}{8}$ inch) in diameter.

Four Official Discs.

Lamellæ Atropinæ. Discs of Atropine. 1-5000th grain (0.013 m.gr.) atropine sulphate in each disc. Mydriatic.

Lamellæ Cocainæ. Discs of Cocaine. 1-50th grain (1.3 m.gr.) cocaine hydrochloride in each disc. Mydriatic and anæsthetic.

Lamellæ Homatropinæ. Discs of Homatropine. 1-100th grain (0.25 m.gr.) homatropine hydrobromide in each disc. Prompt mydriatic.

Lamellæ Physostigminæ. Discs of Physostigmine (Eserine). 1-1000th gr. (0.065 m.gr.) physostigmine sulphate in each disc. Myotic.

OLEATA. OLEATES.

True oleates are semi-solid or solid, acid or normal, chemical combinations of oleic acid with metallic or alkaloidal bases.

PREPARATION.—1. By triturating freshly precipitated, well-dried metallic oxides, or free alkaloids—*not their salts*—with an excess of oleic acid, avoiding heat if possible, as some metallic oxides are easily reduced to their metals and then precipitate from solution (owing to the reducing properties of oleic acid). Oleates prepared by this method are really acid salts of oleic acid, or simply solutions of oleates in a large excess of oleic acid.

2. By interaction between solutions of alkali oleates and metallic salts. For this purpose, Sodium Oleate may be prepared by warming 100 parts of oleic acid to 60° C., and then adding a solution of 16 parts of sodium hydroxide in alcohol, 30 parts, and water, 90 parts, until the mixture is neutral. The resulting soap (sodium oleate) is dissolved in 2,000 parts of water when desired for use.

Hard soap (white castile soap) is used in the official processes instead

of pure sodium oleate, and, as hard soap is an oleo-palmitate of sodium, the product obtained by its decomposition with a metallic salt will be an *oleo-palmitate* of the metal.

Uses.—Oleates are used in dermal medication, and are applied either directly or in the form of ointments, their action being influenced by the readiness with which oleic acid solutions are deeply absorbed when applied to the skin. On account of the fact that alkaloidal salts are insoluble in the usual ointment bases, oleic acid is used in each of the official alkaloidal ointments, the pure alkaloids being converted into acid oleates, which are soluble in, and may be readily incorporated with the ointment bases. On analogous grounds, a similar practice should be pursued in preparing suppositories containing alkaloids.

Emplastrum Plumbi, is a solid Lead Oleate (lead soap), made by boiling lead oxide with olive oil and water until saponification is complete. The product is mainly $(C_{17}H_{33}COO)_2Pb$.

Hydrargyrum Oleatum. Oleated Mercury. Mercuric Oleate, Made by stirring yellow mercuric oxide (which has been thoroughly levigated by trituration with liquid paraffin) with oleic acid, and heating to $50^{\circ} C.$ ($122^{\circ} F.$) until combined.

Mainly $(C_{17}H_{33}COO)_2Hg$, representing 20% of combined mercuric oxide. Used in preparing Ung. Hydrargyri Oleati.

Linimentum Calcis, contains Calcium Oleate, $(C_{17}H_{33}COO)_2Ca$.

Zinci Oleas. Zinc Oleate is official in the form of Ointment only, for which purpose it is prepared by the interaction between solutions of zinc sulphate and hard soap. The product is mainly $(C_{17}H_{33}COO)_2Zn$, representing 12.9 per cent. of zinc oxide.

Zinci Oleostearas. Zinc Oleostearate. Made by the interaction of solutions of zinc sulphate and hard and curd soaps. Composition, about two parts Zinc Oleate, $(C_{17}H_{33}COO)_2Zn$, and one part Zinc Stearate, $(C_{17}H_{33}COO)_2Zn$.

Sapo Animalis (Curd Soap) is mainly Sodium Stearate, $C_{17}H_{33}COONa$.

Sapo Durus (Hard Soap) is mainly Sodium Oleate, $C_{17}H_{33}COONa$.

Sapo Mollis (Soft Soap) is mainly Potassium Oleate, $C_{17}H_{33}COOK$.

Each of the alkaloidal ointments contain alkaloidal oleates, which are made by triturating the free alkaloids with oleic acid, in a warm mortar, until dissolved, or until complete combination has taken place.



PILULÆ. PILLS (MASSÆ PILULARUM. PILL MASSES).

Medicated solid plastic masses, intended to be kept in bulk, and as occasion demands, formed into spherical, ovoid or lenticular bodies, to be swallowed without being previously masticated.

COMPOSITION.—The constituents of pill masses comprise two classes of substances, viz.: the *Medicament*, and the substance used to give the mass its proper adhesiveness, called the *Excipient*.

EXCIPIENTS.—Various excipients are employed, according to the nature of the substances to be massed, and are of three kinds. (1) those intended to develop inherent adhesiveness by imparting the necessary moisture, as water, rectified spirit, or alcohol 60 p.c.; (2) those intended to impart adhesiveness, which include fluids or solids, such as syrup, glucose, glucose-glycerin, mucilage, honey, confection of roses, castor oil, soap with water or spirit, wool-fat, resin ointment, etc.; (3) those intended to absorb excessive moisture and furnish solidity to the mass, usually powders, such as liquorice, kaolin, compound tragacanth powder, althæa, calcium phosphate, etc. The most satisfactory excipient for general, all-round use, is pure, syrupy glucose, diluted with about 20 per cent. of glycerin.

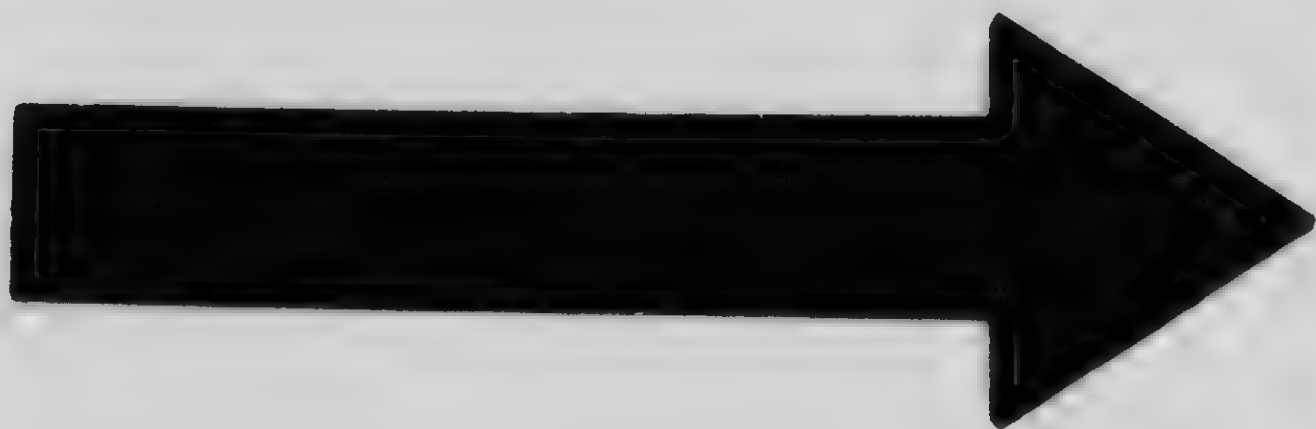
CHARACTERISTICS.—Model pill masses should combine solubility, plasticity, adhesiveness and firmness.

CONSPERGATIVE.—Pills are usually rolled in, and surrounded by, a powder intended to prevent their adhesion to each other and to the container, but a properly made pill seldom requires such treatment, and conspergatives should therefore be avoided, except when *absolutely necessary*.

Powders used for this purpose, are:—starch, althæa, lycopodium, wheaten flour, liquorice, talcum, French chalk, etc.

PILL-COATING.—The pharmacopœia does not direct that any of the pills shall be coated, but the appearance, stability and preservation of some may be greatly enhanced, and their unpleasant taste masked, by coating with gelatin, sugar, gold- or silver-leaf, tolu balsam, sandarac or mastic varnish.

When it is desired to localize the action of certain medicinal agents to the intestinal tract, the pill should receive a coating that will resist the action of the acid gastric juice, and therefore pass through the stomach



MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



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undissolved, into the duodenum, where the alkaline secretion causes the solution of the coating, followed by the disintegration of the pill.

Keratin and Salol are the agents employed for this purpose, and pills treated in this manner are known as Enteric Pills.

USE OF OILS—Several of the masses contain volatile oils, which are added with a view to correcting the griping tendencies of the purgative, or to relieve flatulence; at the same time they also impart a characteristic odor, thus enabling one to identify the pill. Hence we might recognize pill of aloes, by its odor of *Caraway*; compound pill of rhubarb, by its indication of *Peppermint*; compound colocynth pill, by its suggestion of *Cloves*; pill of aloes and iron by its intimation of *Cinnamon* and *Cardamom*, etc.

DOSES.—The official masses are in most cases constructed with a view to their subdivision into 4-grain pills, the dose being indicated as 4 to 8 grains, with but few exceptions. The dose of *Pilula Phosphori* is 1 to 4 grains; of *Pilula Saponis Comp.*, and *Pilula Plumbei cum Opio*, 2 to 4 grains; and of *Pilula Ferri*, 5 to 15 grains.

UNOFFICIAL—Compound Cathartic Pill. Each pill contains: compound extract colocynth, $\frac{1}{2}$ gr.; extract jalap, 1 gr.; calomel, 1 gr.; gamboge, $\frac{1}{4}$ gr. Dose, 1 to 3 pills.

Improved Compound Cathartic Pill. Vegetable Cathartic Pill. Each pill contains: compound extract colocynth, 1 gr.; extract jalap, $\frac{1}{2}$ gr.; podophyllin, $\frac{1}{4}$ gr.; extract gentian, $\frac{1}{2}$ gr.; leptandrin, $\frac{1}{4}$ gr.; extract hyoscyamus, $\frac{1}{4}$ gr., oil peppermint. Dose, 1 to 3 pills.

Pilula Aloes et Mastiche. Lady Webster's Dinner Pill. *Pil. Ante Cibum*. Each pill contains: socotrine aloes, 2 gr.; mastich, $\frac{2}{3}$ gr., flavored with powdered red rose. Dose, 1 to 3 pills.

Pilula Digitalis Composita. Guy's Pill. One grain each of digitalis, squill, and mercury pill, in each pill. Dose, 1 to 2 pills.

Pilula Ferri Iodidi. Blancard's Pill. Each pill contains 1 grain of ferrous iodide massed with acacia, sugar and liquorice, and coated with an ether-solution of tolu balsam. Dose, 2 to 4 pills.

Pilula Antineuralgica. Antineuralgic Pill. Each pill contains: quinine sulphate, 2 grs.; morphine sulphate, $\frac{1}{20}$ gr.; strychnine, $\frac{1}{30}$ gr.; arsenic, $\frac{1}{20}$ gr.; extract aconite leaves, $\frac{1}{4}$ gr. Sometimes the morphine is omitted.

Vallets Mass is a pill mass containing 35 per cent. of recently prepared ferrous carbonate combined with sugar and honey. Dose, 3 to 5 grains.

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PILULÆ.

Eighteen Official Pill Masses.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	DOSE.
I. CONTAINING ALOES.—SEVEN.			
<i>Pilula.</i>			
Aloes Aloes Pill.	Aloes, soap, oil of caraway, glucose syrup.	1 Aloes in 2.	4 to 8 grs. (25 to 50 c.gms).
Aloes et Asafetida Pill Aloes and Asafetida.	Aloes, asafetida, soap, glucose syrup.	Aloes, 3. Asafet., 3 in 10.	4 to 8 grs. (25 to 50 c.gms).
Aloes et Ferri Pill of Aloes and Iron.	Dry FeSO ₄ , aloes, comp. powd. cinnam., glucose syrup.	Dry FeSO ₄ , 1. Aloes, 2 in 10.	4 to 8 grs. (25 to 50 c.gms).
Aloes et Myrrha Pill of Aloes and Myrrh. Rufus' Pill.	Aloes, myrrh, and glucose syrup.	Aloes, 4½, Myrrh, 2½ in 10.	4 to 8 grs. (25 to 50 c.gms).
Colocynthis Compos. Comp. Pill of Colocynth. Pillulæ Coccine. Cochia Pills.	Colocynth, aloes, resin scammony, potassium sulphate, oil of cloves, water.	Res. Scam. 3½, Aloes, 3½, Coloc., 2 in 10.	4 to 8 grs. (25 to 50 c.gms).
Colocynthis et Hyoscyami Pill Coloc. and Henbane.	Comp. pill colocynth, and extract henbane.	Pill Coloc., 2, Ext. Hyos., 1.	4 to 8 grs. (25 to 50 c.gms).
Rhei Composita Compound Rhubarb Pill.	Rhubarb, aloes, soap, myrrh, oil pepper-mint, glucose syru	Rhubarb, 1½, 1 Aloes in 10.	4 to 8 grs. (25 to 50 c.gms).
II. CONTAINING OTHER PLANT-DRUG BASES.—FIVE.			
ipeacuanhæ c Scilla Pill Ipecac. with Squill.	Comp. powd. ipecac., squill, ammoniac., glucose syrup.	1 Dov. Powd. in 2. 5% Opium.	4 to 8 grs. (25 to 50 c.gms).
Ipecac. cum Urginea Pill Ipecac. with Urginea.	Comp. powd. ipecac., Indian squill, ammoniac., glucose syrup.	1 Dov. Powd. in 2. 5% Opium.	4 to 8 grs. (25 to 50 c.gms).
Saponis Composita Compound Pill of Soap. Pill of Opium.	Powdered opium, soap, glucose syrup.	1 Opium in 5.	2 to 4 grs. (12 to 25 c.gms).
Scillæ Composita Compound Squill Pill.	Squill, ginger, ammoniac., soap, glucose syrup.	1 Squill in 4.	4 to 8 grs. (25 to 50 c.gms).
Urginea Composita Compound Urginea Pill. Comp. Indian-Squill Pill.	Indian squill, ginger, soap, ammoniac., glucose syrup.	1 Urginea in 4.	4 to 8 grs. (25 to 50 c.gms).

PILULÆ—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH.	DOSE.
III. INORGANIC SALTS OR ELEMENTS AS MEDICATING AGENTS.—FIVE.			
Ferri Iron Pill. Blaud's Pill.	Dried FeSO_4 , dried Na_2CO_3 , acacia, tragacanth, glucose, water.	22½% FeCO_3 . Nearly 1 in 5.	5 to 15 gr. (3 to 10 d.gms).
Hydrargyri Mercury Pill. Blue Pill.	Mercury, conf. roses, powd. liquorice root.	1 Mercury	4 to 8 grs. (25 to 50 c.gms).
Hydrargyri Subchloridi Composita Comp. Pill Mercurous Chloride. Comp. Pill of Calomel. Comp. Pill of Antimony. Plummer's Pill.	Mercurous chloride, sulphurated antimony, gualac resin, acacia, tragacanth, glucose syrup.	Hg_2Cl_2 , 1. Sb_2S_3 , 1. Resin gualac, 2. in 4½.	4 to 8 grs. (25 to 50 c.gms).
Phosphori Phosphorus Pill.	Phosphorus, cacao butter, wool-fat, kaolin, CS_2 , Na_2SO_4 .	1% Phosphorus	1 to 4 grs. (6 to 25 c.gms).
Plumbi cum Opio Pill of Lead with Opium.	Lead acetate, opium, glucose syrup.	3 Lead Acet. in 4. 12% Opium.	2 to 4 grs. (12 to 25 c.gms.)
IV. CONTAINING AN ALKALOIDAL SALT.—ONE.			
Quininae Sulphatis Pill of Quinine Sulphate.	Quin. sulph., tragacanth, tartaric acid, glycerin.	8 Quin. Sulph. in 10.	2 to 8 grs. (12 to 50 c.gms).

PULVERES. POWDERS.

Uniform mixtures of finely comminuted medicinal substances.

PREPARATION.—As ordinary means of mixing are not sufficiently effective to produce the degree of uniformity desired in this class of official preparations, a satisfactory product may be obtained by the use of powders in a very fine state of subdivision, called "dusted powders," and effecting their combination by trituration in a mortar, followed by sifting, and then lightly triturating again, to mix the particles which have arranged themselves according to their degrees of fineness during sifting.

When powders are to be prepared that contain aromatic substances, representing essential oils, or that have other volatile medicinal constituents, such drugs should not be used in the form of dusted powders, as the

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extent of desiccation required to enable the production of so fine a powder, causes loss of valuable medicinal principles.

UTILITY.—Some of the official members of this group are employed simply as aids in dispensing, and not for medicinal effect, viz., the compound powders of tragacanth and almond. Several are used as astringents, others as purgatives, and the latter invariably contain aromatic and carminative drugs with a view to allaying discomfort caused by the irregular peristaltic action of the intestines, which gives rise to griping pains.

DISPENSING.—If a single dose is ordered, the weighed quantity is folded in paper and enclosed in a suitable envelope; if several doses are to be dispensed, the quantity intended for each individual dose is to be weighed out separately, folded in paper, and the several papers enclosed in a suitable slide box, or covered box. When the powder contains a deliquescent or volatile ingredient, it should be first folded in waxed paper, before folding in the ordinary powder paper.

When the powder is to be dispensed in bulk, and the doses are to be apportioned by the nurse or patient, it should be sent in a round, paper box or wide-mouth bottle, the latter especially if the ingredients contain hygroscopic or volatile constituents; it is also more convenient when traveling.

ADMINISTRATION.—In order to overcome the aversion of the patient for powders containing bitter, nauseous or otherwise unpleasantly tasting medicines, various pharmaceutical devices have been introduced for the purpose of enclosing such substances in soluble cases made of gelatin or rice-flour, known as capsules, cachets, 'konseals,' etc.

When so directed by the practitioner, powders and other drugs of the pharmacopœia may be dispensed in such forms.

UNOFFICIAL.—Certain combinations, not now official, are frequently dispensed under the following officinal names:

Pulvis Aloes et Canellæ. Hiera Picra. Contains aloes 4, canella 1. Dose, 2 to 5 grains.

Pulvis Morphinae Compositus. Tully's Powder. Contains morphine sulphate, 1, with camphor, liquorice and precipitated chalk, 20 of each. Dose, 5 to 15 grains.

Pulvis Phenacetinae Compositus. Contains phenacetin 3, camphor monobromate 2, caffeine citrate 1. Dose, 6 to 18 grains.

PULVERES—Continued.*Eighteen Official Powders.*

TITLE AND SYNONYMS.	INGREDIENTS.	STRENGTH, ETC.	DOSE.
I. POWDERS CONTAINING OPIUM.—FOUR.			
<i>1-40</i> Cretæ Aromæ cum Opio Aromatic Chalk Powder with Opium.	Aromatic chalk powder and powdered opium.	1 Opium in 40, or 2½%.	10 to 60 grs. (6 to 40 d.gms).
<i>1-10</i> Ipecacuanhæ Compositus Compound Powd. of Ipecac. Dover's Powder.	Ipecacuanha, opium and potassium sulphate.	1 Ipecac in 10. 1 Opium in 10.	5 to 15 grs. (3 to 10 d.gms).
<i>1-20</i> Kino Compositus Compound Powd. of Kino.	Kino, opium and cinnamon bark.	1 Opium in 15. 1 Kino in 10.	5 to 10 grs. (3 to 10 d.gms).
<i>1-10</i> Opil Compositus Compound Powd. of Opium.	Opium, black pepper, ginger, caraway, tragacanth.	1 Opium in 10, or 10%.	5 to 15 grs. (3 to 10 d.gms)
II. PURGATIVE POWDERS.—SIX.			
Glycyrrhizæ Compositus Comp. Powder of Liquorice. Brown Powder. Prussian Powder.	Senna, liquorice, fennel, sublimed sulphur and sugar.	1 Senna in 6.	60 to 120 grs. (4 to 8 gms).
Hydrargyrum cum Cretæ Mercury with Chalk. Grey Powder.	Mercury and prepared chalk.	1 Mercury in 3.	1 to 5 grs. (6 to 30 c.gms)
Jalapæ Compositus Compound Powder of Jalap. Cathartic Powder. Pulvis Purgans.	Jalap. 3, potass. acid tartrate, 6, ginger, 1.	4 Jalap in 10.	10 to 60 grs. (6 to 40 d.gms).
Kaladana Compositus Comp. Powd. of Kaladana.	Kaladana, 3, potass. acid tartrate, 6, ginger, 1.	3 Kaladana in 10.	10 to 60 grs. (6 to 40 d.gms)
Rhei Compositus Comp. Powder of Rhubarb. Gregory's Powder.	Rhubarb, light or heavy magnesia and ginger.	1 Rhub. in 4½.	10 to 60 grs. (6 to 40 d.gms)
Scammonii Compositus Comp. Powd. of Scammony.	Resin scammony, jalap and ginger.	1 Scammony resin in 2.	10 to 20 grs. (6 to 12 d.gms)
III. ASTRINGENT POWDERS.—TWO.			
Catechu Compositus Comp. Powder of Catechu.	Catechu, kino, rhatany, cinnamon and galingale	4 Catechu in 10.	10 to 60 grs. (6 to 40 d.gms).
Cinnamomi Compositus Comp. Powder of Cinnamon. Pulvis Aromaticus.	Cinnamon, cardamom and ginger.	1 Cinnamon in 3.	10 to 60 grs. (6 to 40 d.gms).

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PULVERES—Continued.

TITLES AND SYNONYMS.	INGREDIENTS.	STRENGTH, ETC.	DOSE
IV. FLAVORING AND DEMULCENT POWDERS.—TWO.			
Amygdalæ Compositus Comp. Powder of Almonds. Confection of Almonds.	Blanched sweet almonds, sugar and acacia.	6 in 10.	Used for Mint. Amygd.
Tragacanthæ Compos. Comp. Powd. of Tragacanth.	Tragacanth, acacia, starch and sugar.	1½ in 10. Sustaining medium.	10 to 60 gra. (6 to 40 d.grms).

V. POWDERS CONTAINING METALLIC SALT SEE.—TWO.

Antimonialia Antimonial Powder. James' Powder. Pulvis Jacobi.	Antimonious oxide and calcium phosphate.	1 Sb ₂ O ₃ in 2.	3 to 6 gra. (2 to 4 d.grms).
Cretæ Aromaticæ Aromatic Powder of Chalk. Confectio Aromatica.	Cardamom, sugar, cinnamon, prepared chalk, nutmeg and cloves.	1 P'p'd. chalk in 4.	10 to 60 gra. (6 to 1 d.grms)

VI. EFFERVESCENT POWDER.—ONE.

Sodæ Tartaratas Effervescentes Effervescent Tartarated Soda Powder. Effervescent Rochelle Salt. Sedlitz Powder.	Rochelle salt and sodium bicarbonate in blue paper. Tartaric acid 38½ gra. in white paper.	116 gra. rochelle salt in each blue paper.	1 to 2 of each powder.
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VII. ANTHELMINTIC POWDER.—ONE.

Buteæ Seminum Butea Seeds.	Dried and powdered kernels, after removing integuments.	Anthelmintic for ascarides.	10 to 20 gra. (6 to 12 d.grms).
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RESINÆ. RESINS.

Solid preparations, wholly insoluble in water, obtained from plant-drugs by natural or aided exudation, or by distillation of oil from oleo-resins, or by precipitation from concentrated alcoholic extracts with the aid of water.

Natural Resins constitute the class obtained by natural exudation, or after incision, or the application of heat; while resins resulting from the precipitation of alcoholic solutions, or obtained as a residue

remaining after distilling volatile oils from oleo-resins, constitute the *Derived Resins*.

The precipitation method involves the exhaustion of the drug with rectified spirit by digestion or percolation, then recovering most of the alcohol by distillation and pouring the concentrated liquid into a large volume of cold water under constant stirring; the resin deposits on standing, is washed repeatedly with cold water, collected, drained and dried, while other extracted matter remains in solution in the aqueous fluid.

In preparing Podophyllum Resin, the concentrated percolate is poured into water containing about four per cent. of *Hydrochloric Acid*, for the purpose of hastening the deposition of the resin.

UNOFFICIAL.—The varnish-resins:—copal, kauri, dammar, sandarac, mastic, elemi, olibanum, dragon's blood (used to give a mahogany color to varnishes) and others.

RÉSINÆ.

Seven Official Resins (two natural, five derived).

TITLES AND SYNONYMS.	SOURCES.	PROCESS.	DOSE, ETC.
Benzoinum Benzoin. Sumatra Benzoin.	Balsamic-resin of <i>Styrax Benzoin</i> .	Exudation.	Tr. Benz. Co. Adeps Benzoinatus. Sevum Benzoinatus.
Guaiaci Resina Guaiacum Resin.	Stems of <i>Guaiacum officinale</i> and <i>sanctum</i> .	Exudation.	5 to 15 grs. (3 to 10 d.gms).
Jalapæ Resina Jalap Resin	Tubercles of <i>Ipomæa purga</i> .	Mac., dist., precipitation.	2 to 5 grs. (12 to 30 c.gms).
Kaladana Resina Kaladana Resin. Pharbitisin.	Seeds of <i>Ipomæa hyderacea</i> .	Maceration, distillation, precipitation.	2 to 8 grs. (12 to 50 c.gms).
Podophylli Resina Podophyllum Resin.	Rhizome of <i>Podophyllum peltatum</i> .	Perc., dist., precipitation.	$\frac{1}{4}$ to 1 gr. (16 to 60 m.gms).
Podoph. Indici Resina Indian Podophyllum Resin. Podophyllum Emodi Resin.	Rhizome of <i>Podophyllum Emodi</i> .	Percolation, distillation, precipitation.	$\frac{1}{4}$ to 1 gr. (16 to 60 m.gms).
Resina Resin. Colophony.	Crude oleo-resin of various species of <i>Pinus</i> .	Distillation.	Externally.
Scammonia Resina Resin Scammony.	Root of <i>Convolvulus Scammonia</i> .	Perc., dist., precipitation.	4 to 8 grs. (25 to 50 c.gms).

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SALES EFFERVESCENTES. EFFERVESCENT SALTS.

Substances in granular or powdered form, which dissolve with brisk effervescence when brought into contact with water.

Many bitter and otherwise unpleasant substances may, when prepared in the form of Effervescent Salts, be administered as palatable, cooling, effervescing draughts on dissolving in water, the pungency of the dissolved and escaping carbonic oxide serving to mask the taste of the medicating agent.

COMPOSITION.—These salts are all prepared on the same general plan, being composed of: 1, the Medicinal Agents; 2, the Effervescent Agents and 3, the Flavoring Agents.

THE MEDICINAL AGENTS.—Those represented in the official compounds are the saline substances indicated in the titles of the several effervescent preparations, viz.: caffeine citrate, lithium citrate, magnesium sulphate, sodium sulphate, sodium phosphate, sodium citro-tartrate, sodium and potassium tartrate. Many other medicinal substances may be exhibited in granular effervescent form, e.g., pepsin, citrate of iron and quinine, sodium salicylate, caffeine hydrobromide, cerium and bismuth compounds, as well as salines representing the main constituents of the popular mineral springs.

If the medicinal substance contains much water of crystallization, it should be rendered partially or wholly anhydrous by dessication, before admixture with the other ingredients.

THE EFFERVESCENT AGENTS.—These are represented by sodium bicarbonate combined with citric or tartaric acid. If a *granular* salt is to be made, citric acid is generally selected, since the resulting granules are firmer and will keep better, but generally a mixture of citric and tartaric acid is preferred.

When the effervescent compound is dissolved in water, the acids decompose the alkali-bicarbonate with copious evolution of carbonic oxide. When formulæ are to be devised for special combinations, in order to regulate the reaction of the dissolved product as to whether it shall be acid, neutral or alkaline, it must be borne in mind, that, 20 grains of sodium bicarbonate will saturate 17.8 grains of tartaric acid or 16.7 grains of citric acid, and the quantity of acid or alkali to be used may therefore be readily calculated.

THE FLAVORING AGENTS.—Powdered refined sugar is in most cases employed for this purpose, or the sugar may be further flavored, when so desired, with spirit of orange or lemon, or alcoholic tincture of celery seed, etc.

GRANULATION.—The several ingredients, in fine powder, should be uniformly mixed without much pressure, and may then be granulated by

either of the following methods. Any fine particles should be removed from the finished product by shaking in a 20 to 30-mesh sieve.

THE ALCOHOL PROCESS.—The powder is dampened with commercial alcohol to a stiff paste, which is then to be rubbed through a well tinned 6 or 8-mesh sieve with the hand. The resulting granules are then exposed to dry air, or in a suitable drying closet having a temperature not exceeding 55° C. (130° F.).

THE HEAT PROCESS.—*The Official Process.*—The mixture is placed in a pan or dish which has been previously heated to between 90° and 105° C. (194° to 220° F.), and the heat continued until semi-fusion has just commenced, when the pasty mass is to be quickly stirred to form granules, which are subsequently dried at 55° C. (130° F.).

PRESERVATION.—Effervescent salts should be kept in well-stoppered bottles, as they readily attract moisture from the atmosphere, and then rapidly deteriorate.

There are six official effervescent compounds in the form of *granules* and one in the form of *powder*. All contain sodium bicarbonate, tartaric and citric acids, excepting Pulvis Sodæ Tartaratæ Effervescens, which contains no citric acid.

SALES EFFERVESCENTES.

Seven Official Effervescent Salts.

TITLES AND SYNONYMS.	CHIEF INGREDIENT. REMARKS.	STRENGTH.	DOSES.
<i>Effervescens:</i>			
Caffeinæ Citras Efferves. Caffeine Citrate.	Caffeine citrate. Contains sugar.	1 in 25.	60 to 120 gr. (4 to 8 gms).
Lithii Citras Efferves. Lithium Citrate.	Lithium citrate. Contains no sugar.	1 in 20.	60 to 120 gr. (4 to 8 gms).
Magnesi Sulphas Eff. Magnesium Sulphate. Efferves. Epsom Salt.	Magnesium sulphate. Contains sugar.	1 in 2.	60 to 180 gr. 240 to 480 gr.
Sodii Citro-Tartras Eff. Sodium Citro-Tartrate.	Sodium bicarb., citric and tartaric acids. Contains sugar.		60 to 120 gr. (4 to 8 gms).
Sodii Phosphas Eff. Sodium Phosphate.	Sodium phosphate. Contains no sugar.	1 in 2.	60 to 120 gr. 150 to 240 gr.
Sodii Sulphas Efferves. Sodium Sulphate. Efferves. Glauber's Salt.	Sodium sulphate. Contains no sugar.	1 in 2.	60 to 120 gr. 150 to 240 gr.
Pulvis Sodæ Tartaratæ Eff. Tartarated Soda Powd. Effervescent Rochelle Salt. Seidlitz Powder.	Rochelle salt and so- dium bicarb. in <i>blue</i> paper, (1). Tartaric acid, 2.5 gms. in <i>white</i> paper, (2).	7.5 gms. Ro- chelle salt, 2.5 gms. sod. bic. in each pow- der.	Disac' (1) in water (cold or warm) and add (2).

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SUPPOSITORIA. SUPPOSITORIES.

Solid medicinal preparations of cylindrical, conical or globular form designed for introduction into the rectal, urethral, vaginal, nasal, or aural channels, there to be absorbed; of such consistency that they will melt at the temperature of the body, or liquefy in the presence of moisture; they should be non-irritating, and must not become rancid.

When medicines are introduced into the rectum, they may be intended for local action, or for general absorption, when the stomach route is, for some reason, not available.

BASES.—The bases employed in making suppositories are oil of theobroma (cacao butter), soap, and glycerin-gelatin; cacao butter is the one most commonly used, on account of its low fusing-point, 31 to 34° C. (88 to 93° F.), and its bland, non-irritant properties, and the fact that it readily lends itself to incorporation with a large number of medicinal agents.

More or less white beeswax, according to prevailing temperatures, may be used in the place of an equivalent amount of cacao butter in tropical and subtropical parts of the Empire, when otherwise the suppositories of the text of the pharmacopœia would be too soft for convenient use. For suppositories containing chloral, creosote, phenol, their derivatives, or substances which soften cacao butter, the fusing-point may be raised by the addition of a small amount of spermaceti or white beeswax, but the melting-point must not be raised above 37° C. (98·6° F.).

EXCIPIENT.—Cacao butter frequently masses with difficulty, especially if it is to be combined with dry powders or extracts; in such cases the presence of a small quantity of an adhesive, firm, fatty excipient is indicated, for which purpose *Adeps Lanæ Hydrosus*, (Lanolin), is recommended. Glycerin is occasionally employed, but is not satisfactory.

SHAPES AND SIZES.—RECTAL suppositories should be about 7-8ths inch in length, and represent the bulk of *one gram* of cacao-butter, and should be of a rounded-conical form, the outline being represented by two convex surfaces; they are occasionally desired to weigh *two grams*.

VAGINAL suppositories (pessaries), differ from rectal suppositories only in size and weight; their weight should be about *four grams*, rarely 8 grams; they are occasionally globular or oval in form.

URETHRAL suppositories (bougies), should weigh *one gram*, length $2\frac{1}{4}$ inches or more, diameter about 1·5 inch; in shape, a cylindrical pipe with one end rounded. NASAL suppositories are similar but usually shorter. AURAL suppositories are cartridge shaped and weigh 5 to 6 decigrams.

PREPARATION.—Suppositories are rolled by hand, or cast in moulds previously cooled on ice or in iced-water, the interior of the moulds having been dusted with lycopodium, or pencilled with soap liniment in order to prevent the suppository from adhering to it; also made by cold compression, which is a very satisfactory process in most cases, furnishing suppositories with facility and despatch, that are attractive in appearance and elegant in finish, and accurate, perfect and uniform in size and shape; features that are usually conspicuous by their absence in suppositories made by other methods. Glycerin suppositories may be made of various sizes, two, four or eight grams in weight, as desired.

SUPPOSITORIA.

Seven Official Suppositories.

TITLES AND SYNONYMS.	BASES.	STRENGTH.
<i>Suppositoria:</i>		<i>Each contains:</i>
Acidi Carbolic Carbolic Acid Suppositories. Phenol Suppositories.	Cacao butter and white bees-wax.	1 grain phenol.
Acidi Tannici Tannic Acid Suppositories.	Cacao butter.	3 grains tannic acid.
Belladonnæ Belladonna Suppositories.	Cacao butter.	2.5 grs. liq. ext. belladon. or 1-60 gr. alkaloids.
Glycerini Glycerin Suppositories. Gelatin Suppositories.	Gelatin.	70 per cent. glycerin.
Iodoformi Iodoform Suppositories.	Cacao butter.	Abt. 3 grs. iodoform.
Morphinæ Morphine Suppositories.	Cacao butter.	1-4th grain morphine hydrochloride.
Plumbi Composita Comp. Lead Suppositories.	Cacao butter.	3 grains lead acetate. 1 grain opium.

TABELLÆ. TABLETS.

Small lozenges of chocolate with some medicament, each weighing five grains (0.3 gram).

One Official Tablet.

Tabellæ Trinitrini. Trinitrin Tablets. Tablets of Nitroglycerin. Glonoin Tablets. Each tablet contains 1-130th grain (0.0005 gram) of trinitroglycerin, $C_3H_5(NO_3)_3$, of commerce, and weighs five grains. Dose, one or two tablets.

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TROCHISCI. TROCHES (LOZENGES.)

Small, dry, solid, flattened masses of round, oval, square, or octagonal shape, not intended for mastication, but to dissolve slowly in the mouth, and are therefore adapted for the administration of such medicines only, as are not required in large quantities, and are devoid of very disagreeable flavour.

The remedial action of lozenges is generally designed to be purely local, either as a demulcent, stimulant, antiseptic, sedative, expectorant, or astringent.

PREPARATION.—The vehicle is usually powdered refined sugar, with which the medicating agent may be incorporated by trituration. Adhesiveness is imparted to the mixture by the use of gum acacia or tragacanth; suitable flavouring agents are added, also mucilage of acacia and water, and the whole beaten into a plastic mass, which is rolled out in thin flat sheets, divided into pieces of desired size and shape by means of lozenge-cutters, and dried in a hot-air chamber at a moderate temperature.

FLAVOURING AGENTS.—The constituents of the mass, other than the medicating agent, constitute the *Basis*, and four different combinations are employed in preparing the official lozenges, varying mainly as to the kind of flavouring agent selected.

BASES.—The *Simple Basis* is composed of sugar and gum acacia, each in fine powder, mucilage of gum acacia and distilled water. Other bases contain specified flavours. The *Rose Basis* contains oil of rose. The *Fruit Basis* is made up of sugar, tragacanth, and black-currant paste. The *Tolu Basis* is flavoured with tincture of balsam tolu.

DOSES.—No official doses are mentioned, but the dose may be considered as, *one to three lozenges*:

TROCHISCI.*Sixteen Official Lozenges.*

TITLES AND SYNONYMS.	CHIEF INGREDIENTS IN EACH LOZENGE.	BASES.
<i>Trochiscus:</i> Acidi Benzoici Benzoic Acid Lozenge.	Benzoic acid, one-half-grain.	Fruit Basis.
Acidi Carbolici Carbolic Acid Lozenge. Phenol Lozenge.	Phenol, one-half grain.	Sugar, lemon juice, acacia, tragacanth.

TROCHISCI—Continued.

TITLES AND SYNONYMS.	CHIEF INGREDIENTS IN EACH LOZENGE.	BASES.
<i>Trochisci:</i> Acidi Tannici Tannic Acid Lozenges.	Tannic acid, one-half grain.	Tolu Basis.
Bismuthi Compositus Compound Bismuth Lozenges.	Bismuth carb., $2\frac{1}{2}$ grains. Magnes. carb., $2\frac{1}{2}$ grains. Precip. calcium carb., 5 grs.	Rose Basis.
Catechu Catechu Lozenges.	Catechu, one grain.	Simple Basis.
Ferri Redacti Reduced Iron Lozenges.	Reduced iron, one grain.	Simple Basis.
Guaiaci Resina Guaicum-Resin Lozenges.	Guaicum resin, three grains.	Fruit Basis.
Ipecacuanha Ipecacuanha Lozenges.	Ipecac. root, one-fourth grain.	Simple Basis.
Kino Eucalypti Eucalyptus Kino Lozenges. Red Gum Lozenges. Eucalyptus Gum Lozenges.	Eucalyptus Kino, one grain.	Fruit Basis.
Krameria Krameria Lozenges. Rhatany Lozenges.	Extract Krameria, one grain.	Fruit Basis.
Krameria et Cocainae Krameria and Cocaine Los. Rhatany and Cocaine Los.	Extract Krameria, one grain. Cocaine hydrochloride, one-twentieth grain.	Fruit Basis.
Morphinae Morphine Lozenges.	Morph. hydrochloride, one-thirty-second grain.	Tolu Basis.
Morphinae et Ipecac. Morphine and Ipecac. Los.	Morph. hydrochloride, one-thirty-second grain. Ipecac. root, one-tenth grain.	Tolu Basis.
Potassii Chloratis Potassium Chlorate Lozenges.	Potass. chlorate, three grains.	Rose Basis.
Santonini Santonine Lozenges.	Santonin, one grain.	Simple Basis.
Sulphuris Sulphur Lozenges.	Precip. sulphur, five grains. Potass. bitartrate, one grain.	Tinct. orange, acacia, sugar, mucilage acacia.

UNGUENTA. OINTMENTS.

Unctuous preparations of such consistence that they may be rubbed on the skin, and gradually liquefy while in contact, or sufficiently soft to be spread upon cloth, cotton-wool or gauze at the ordinary temperature, yet firm enough to adhere to the skin without melting.

This group comprises both the preparations known in other pharma-

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copœias as *Cerata* (Cerates), unctuous preparations which melt above the normal temperature of the human body, and those termed *Unguenta* (Ointments), which melt at or below 37°C. (99°F.).

PREPARATION.—The pharmaceutical processes involved in the preparation of the official ointments are, trituration (incorporation), fusion, and chemical action with fusion.

It is highly important that a suitable basis be employed, and that it be absolutely free from rancidity, as well as that the medicating material be of suitable character, and free from gritty particles, since ointments are frequently applied to tender excoriated surfaces, and would otherwise become a source of irritation instead of a soothing application.

Many substances, such as mercury, iodine, the alkaloids, etc., can be made to produce their effects upon the system, when applied in the form of ointment, quite as effectually as when taken *per ora*, hence ointments required for such purposes, should be prepared with bases that readily and deeply penetrate the tissues.

CLASSES.—According to their therapeutic action, ointments may be conveniently divided into three classes, as follows:

1. Protective ointments, are nonabsorbable and act strictly epidermatically, *i.e.*, on the outer skin or cuticle only, and ointments intended for such external action as astringents, counterirritants, antiseptics, parasitocides, etc., as well as protective agents, are properly made with liquid paraffin, or paraffin ointment.

2. Emollient ointments, are intended for penetration *into*, but *not through* the skin, *i.e.*, act endermatically, and include such as are emollients, anodynes, stimulants, resolvents, sedatives, etc. The best vehicles for such ointments are the vegetable oils and true fats, as lard, suet, olive or almond oil, etc.

3. Diadermatic ointments, are those which produce constitutional or systemic effects, by penetrating *not only into*, but *through* the skin, and thereby permit the absorption of the medicating agent. The systemic action of mercurials, iodides, belladonna, etc., may be obtained when the remedial agent is combined with wool-fat, or its hydrous variety, lanolin.

BASES.—It is necessary in preparing ointments, that consideration be given to the intelligent selection of the basis, having due regard for the object of its use, as to whether the ointment is designed for mere superficial action, or intended to produce a local or general effect through the *absorption* of its medicinal ingredients.

The official bases are: lard, benzoated lard, soft paraffin, liquid paraffin, wool-fat, hydrous wool-fat, suet, almond and olive oil. Beeswax, hard paraffin and spermaceti are frequently employed in conjunction with the bases just mentioned, in order to raise the melting-point of the product, or when the base is of itself too soft for practical use.

A consideration of the official ointment bases follows:

OINTMENT BASES.

TITLES AND SYNONYMS.	SOURCE.	PROCESS.	REMARKS.
I. LIQUIDS AND SOLIDS HAVING LOWER MELTING-POINTS			
Adeps Benzoatus Benzoated lard.	Powdered Benzoin (3), Purified Lard (100).	Digestion and colation.	M.P. 38°C. (100°F.).
Adeps Præparatus Purified Lard. Axungia Porcina.	Abdominal fat of Hog (<i>Sus scrofa</i>).	Fusion and expression	M.P. 38°C. (100°F.).
Adeps Lanæ Wool Fat. Anhydrous Lanolin.	Purified fat of sheep's wool.	Maceration with ether or benzine.	M.P. 40°C. (104°F.).
Adeps Lanæ Hydrosus Hydrous Wool-fat. Lanolin.	Wool-Fat (7), Water (3).	Fusion and trituration.	M.P. 40°C. (104°F.).
Oleum Amygdalæ Almond Oil. Expressed Oil of Almond.	Bitter or Sweet Al- mond nut (<i>Prunus</i> <i>Amygdalus</i>).	Expression.	Congeals 20°C. (-4°F.). 0.915 to 0.920.
Oleum Olivæ Olive Oil. Sweet Oil.	Ripe Olive fruit (<i>Olea</i> <i>europea</i>).	Expression.	Congeals 10°C. (50°F.). 0.915 to 0.918.
Paraffinum Liquidum Liquid Paraffin. Paraffin Oil.	Liquid hydrocarbons from petroleum.	Fractional distillation.	0.860 to 0.890. Non-saponifiable.
Paraffinum Molle Soft Paraffin. Petrolatum. Petroleum Jelly.	Semi-solid hydrocar- bons of paraffin series. Obtained from pe- troleum.	Purification.	M.P. 42-46°C. (108-115°F.). Non-saponifiable.
II. SOLIDS HAVING HIGHER MELTING POINTS.			
Cera Alba White Wax. White Beeswax.	Yellow beeswax, bleached.	Exposure to moisture, air and sunlight.	M.P. 61-64°C. (142-147°F.).
Cera Flava Yellow Wax. Yellow Beeswax.	Sp. gr. 0.958 to 0.970. Honeycomb of the Bee.	Fusion and expression.	M.P. 61-64°C. (142-147°F.).
Cetaceum Spermaceti.	Sp. gr. 0.950 to 0.960. Head of Sperm Whale.	Expression and purifica- tion.	M.P. 48°C. (118°F.).

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OINTMENT BASES—Continued.

TITLES AND SYNONYMS.	SOURCE.	PROCESS.	REMARKS.
Paraffinum Durum Hard Paraffin. Paraffin Wax.	Hard hydrocarbons of paraffin series. Obtained from shale.	Distillation, refrigeration, purification.	M.P. 50-60°C. (122-140°F.). Non-saponifiable.
Sevum Benzoatum Benzoated Suet.	Powdered Benzoin (3). Prepared Suet (100).	Digestion and colation.	M.P. 33-46°C. (91-115°F.).
Sevum Præparatum Prepared Suet.	Abdominal fat of sheep (<i>Ovis aries</i>).	Fusion and expression.	M.P. 33-46°C. (91-115°F.).

PURIFIED LARD.—Being an animal-fat, similar in composition to that of the human body, it ranks among the best ointment bases. It is characterized by, free absorption; great affinity for liquids; can readily be combined with one-fourth its weight of water, thereby enabling its incorporation with many fluid preparations; its general firm consistence; a melting-point that approximates the normal body-temperature; its cheapness; the readiness with which it may be purified; and the fact that it softens the skin better than other bases. Its tendency to rancidity, followed by granulation, and its liability to chemical reaction with certain medicinal substances, are perhaps the sole objections to its almost constant use. It should be anhydrous and free from saline impurities.

BENZOATED LARD.—This form of lard furnishes all of the desirable features of prepared lard as an ointment-basis, but with its tendency to rancidity considerably lessened, when properly prepared, which, however, can scarcely be claimed for lard benzoated by the official method.

WOOL-FAT.—This animal fat, which is the cholesterin fat of sheep's wool, possesses advantages of, deep absorption; is a good skin softener; has a wonderful affinity for aqueous liquids; a firm consistence; freedom from rancidity; a low melting-point, 40° C. (104° F.), hence quite soft at the body temperature. The hydrous form, known as Lanolin, is commonly employed for ointments, and is, like the anhydrous lanolin, objectionably adhesive *per se*, but this stickiness may be diminished by combining it with liquid or soft paraffin, but such mixtures must not be used as a basis for ointments intended to produce systemic effects; lanolin will combine with fifty per cent. or more of water.

SOFT PARAFFIN.—Is not a true fat, but a mixture of the semi-solid hydrocarbons obtained from petroleum. It does not soften the skin or

penetrate the tissues like lard or wool-fat, and hence is used only as a bland, neutral, protective dressing. It does not combine well with aqueous fluids; will take up only five per cent. or less of water; but keeps permanently; does not become rancid; has a low melting-point, is not acted upon by acids or alkalies, and hence is non saponifiable.

OILS, ETC.—Olive oil, almond oil, cocoanut oil, oleic acid, etc., soften the skin readily, are well absorbed and hence are satisfactory media for promoting the administration of medicinal ingredients in the form of emollient or endermatic ointments. All the alkaloidal ointments contain oleic acid, which is combined with the free alkaloid to form an oleate, before incorporating with the basis.

MELTING-POINT RAISERS.—The bases possessing the *higher* melting-points are employed when ointments would otherwise be unduly soft or semi-fluid in consistence. Their presence yields firmer ointments in proportion to the quantity used.

In tropical and subtropical parts of the Empire, more or less lard, suet, or beeswax may be employed in the preparation of the official ointments, when prevailing high temperatures otherwise render the basis too soft for convenient use; but the official proportion of medicating agent must in all cases be maintained.

HARD PARAFFIN.—Employed in combination with soft paraffin, as Paraffin Ointment, in preparing many of the official ointments. When used as a basis for ointments containing white substances, the *white* variety of soft paraffin is used; for coloured substances, the *yellow* variety.

INDURATED LARD has been employed with advantage in sub-tropical climates to produce ointments of suitable consistence to withstand the softening tendencies of the heat of summer. Though official in the B.P. 1898, it has been deleted from the present revision. Many pharmacists have however found it to be a very useful and satisfactory ointment basis. It may be prepared by subjecting lard to pressure, thereby depriving it of a portion of its oil (*olein*), furnishing a product which contains a greater proportion of the more solid fats, mainly *stearin*. In the Province of Ontario, a mixture of purified lard, three parts, and indurated lard, one part, furnishes an excellent ointment basis; in tropical climates, indurated lard with no added prepared lard, would be used.

In the following classification of the ointments, the representatives of this group are arranged in accordance with the bases employed.

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UNGUENTA.

Forty-three Official Ointments.

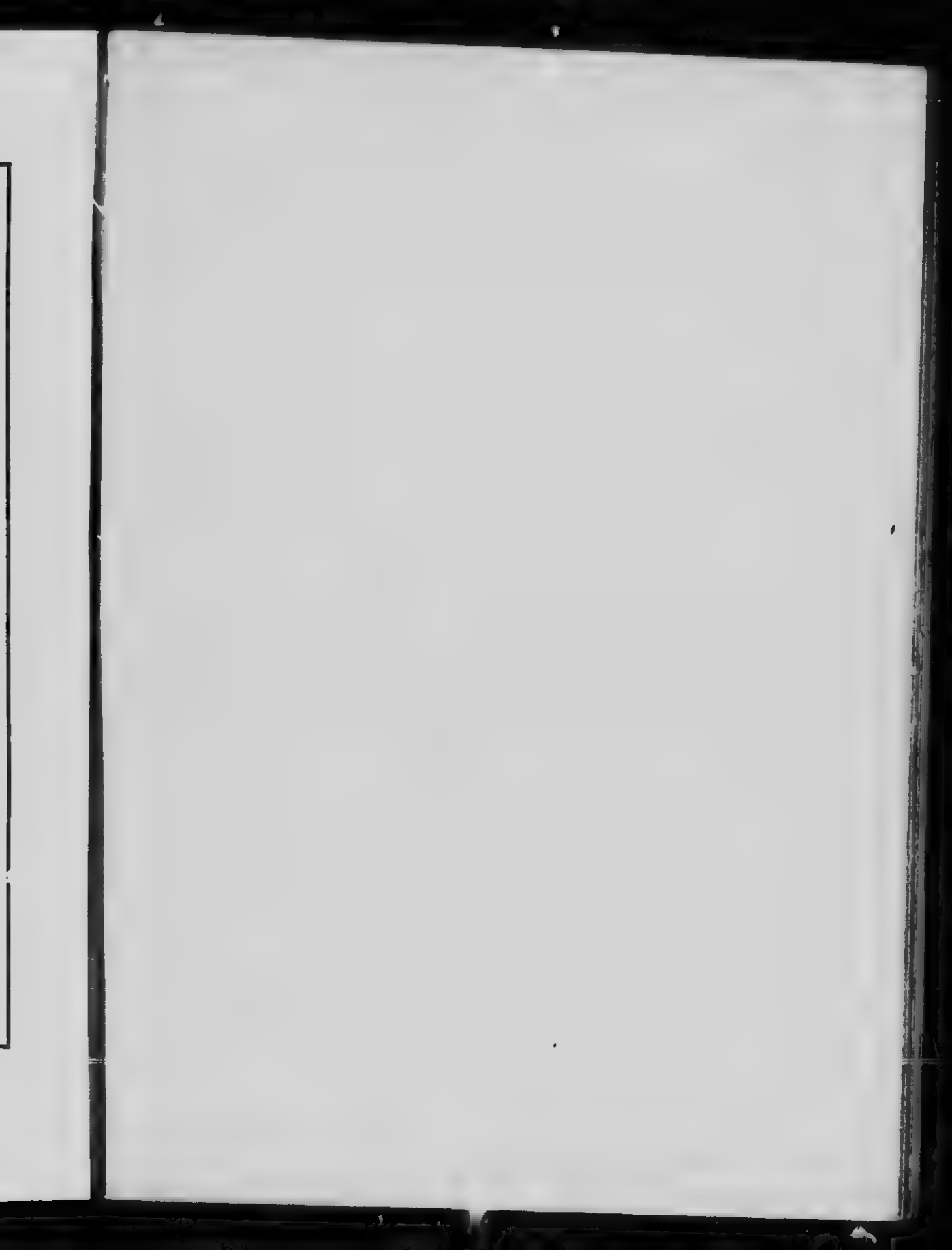
TITLES AND SYNONYMS.	STRENGTH. PARTS.	REMARKS.
I. HAVING A PREPARED LARD BASIS.—FOUR.		
<i>Unguentum:</i>		
Aconitinæ Aconitine Ointment.	1 Aconitine in 50. Incorporation.	Alkaloid dissolved in oleic acid.
Atropinæ Atropine Ointment.	1 Atropine in 50. Incorporation.	Alkaloid dissolved in oleic acid.
Cocainæ Cocaine Ointment.	1 Cocaine in 25. Incorporation.	Alkaloid dissolved in oleic acid.
Iodoformi Iodoform Ointment.	1 Iodoform in 10. Incorporation.	Iodoform in impal- pable powder.

II. HAVING A BENZOATED LARD BASIS.—SEVENTEEN.

Belladonnæ Belladonna Ointment.	0.6% Bellad. Alkaloids. 8 Liq. Ext. Bellad. in 10. Evaporation. Incorpora- tion.	Liq. ext. evaporated to one-fourth before in- corporation.
Cantharidini Cantharidin Ointment. Unguentum Lyttæ.	1 Cantharidin in 3000. Solution. Fusion. Incor- poration.	The glucoside dissolved in chloroform before incorporation.
Gallæ Gall Ointment. Nut-gall Ointment.	1 Nut-gall in 5. Incorporation.	Nut-gall in fine powder. Avoid steel spatula.
Gallæ cum Opio Gall with Opium Ointment.	7.5% Opium. Incorporation.	Avoid steel spatula. Contains $\frac{1}{4}$ % morphine.
Hydrargyri Mercury Ointment. Blue Ointment. Zinc Ointment.	30% Mercury. Trituration until mercury is extinguished.	Metallic globules must not be visible.
Hydrargyri Ammoniaci Ammoniated Mercury Ointment. White Precipitate Ointment.	1 Ammoniated mercury in 20. Incorporation.	Medicament must be in fine powder. Avoid steel spatula.
Hydrargyri iodidi Rubri Mercuric Iodide Ointment. Red Iodide of Mercury Ointment.	1 Mercuric iodide in 25. Incorporation.	Iodide in fine powder. Avoid steel spatula.
Hydrargyri Oleati Mercuric Oleate Ointment.	1 Oleated mercury in 4. Incorporation.	Avoid steel spatula.
Hydrargyri Subchloridi Mercurous Chloride Ointment. Calomel Ointment. Oint. Mild Chloride of Mercury.	1 Mercurous chloride in 5. Incorporation.	Avoid steel spatula.
Iodi Iodine Ointment.	1 Iodine in 25. Incorporation.	KI to dissolve iodine in the glycerin.

UNGUENTA—Continued.

TITLES AND SYNONYMS.	STRENGTH. PROCESS.	REMARKS.
<i>Unguentum:</i>		
Myrobalani Myrobalan Ointment.	1 Myrobalan fruits in 5. Incorporation.	Action like Ung. Galla. Avoid steel spatula.
Myrobalani cum Opio Myrobalan and Opium Oint.	7.5% Opium. Incorporation. Action like Ung. Galla cum Opio.	Avoid steel spatula.
Plumbi Iodidi Lead Iodide Ointment.	1 Lead iodide in 10. Incorporation.	
Potassii Iodidi Potassium Iodide Ointment.	1 Potassium Iodide in 10. Solution. Incorporation.	Contains potassium carbonate and water.
Staphisagriae Stavesacre Ointment.	1 Stavesacre seeds in 5. Digestion and fusion.	Contains yellow beeswax. Seeds digested with basis.
Sulphuris Sulphur Ointment.	1 Sublimed sulphur in 10. Incorporation.	Avoid steel spatula.
Zinci Zinc Ointment.	3 Zinc oxide in 20, or 15%. Incorporation.	Zinc oxide in impalpable powder.
III. HAVING A SOFT PARAFFIN BASIS.—FOUR.		
Chrysarobini Chrysarobin Ointment.	1 Chrysarobin in 25. Incorporation.	
Hydrargyri Nitratis Dilutum Diluted Mercuric Nitrate Oint. Diluted Citrine Ointment.	1 Citrine ointment in 5. Trituration.	Avoid steel spatula. Soft paraffin, yellow.
Hydrargyri Oxidi Flavi Yellow Mercuric Oxide Oint.	1 Yellow mercuric oxide in 50. Incorporation.	Avoid steel spatula. Soft paraffin, yellow.
Zinci Oleatis Zinc Oleate Ointment.	1 Zinc oleate (recently prepared) in 2. Fusion.	Zinc sulphate and hard soap, white paraffin.
IV. HAVING A MIXED HARD AND SOFT PARAFFIN BASIS.—SIX.		
Capsici Capsicum Ointment.	1 Capsicum in 4. Digestion and colation.	Contains prepared lard. Stir until cold.
Chaulmoograe Chaulmoogra Ointment. Gynocardia Ointment.	1 Chaulmoogra Oil in 10. Fusion.	Leprosy, rheumatism and chronic skin diseases. Soft paraffin, white.
Creosoti Creosote Ointment.	1 Creosote in 10. Fusion.	Soft paraffin, white.
Eucalypti Eucalyptus Ointment.	1 Oil eucalyptus in 10. Fusion.	Soft paraffin, white.
Paraffini Paraffin Ointment.	Paraffins: hard 27, soft 70. White beeswax 3. Fusion.	Basis for four other ointments.
Plumbi Subacetatis Lead Subacetate Ointment. Goulard's Ointment.	1 Goulard's Extract in 8, or, about 3% lead subacetate. Fusion.	Contains 25% wool-fat. Avoid steel spatula.



UNGUENTA—Continued.

TITLES AND SYNONYMS.	STRENGTH. PROCESS.	REMARKS.
V. HAVING A PARAFFIN OINTMENT BASIS.—FOUR.		
<i>Unguentum:</i>		
Acidi Borici Boric Acid Ointment.	1 Boric acid in 10. Fusion.	Sift in the acid. Paraffin ointment, white.
Acidi Carbolici Carbolic Acid Ointment.	1 Phenol in 100. Fusion.	Paraffin ointment, white.
Acidi Salicylici Salicylic Acid Ointment.	1 Salicylic acid in 50. Fusion.	Sift in the acid. Paraffin ointment, white. Avoid steel spatula.
Hydrargyri Oxidi Rubri Red Mercuric Oxide Ointment. Red Precipitate Ointment.	1 Red mercuric oxide in 10. Paraffin Ointment, yellow. Fusion.	Sift in the oxide. Avoid steel spatula. Must be fine powder.
VI. HAVING AN OLIVE OIL BASIS.—TWO.		
Hydrargyri Compositum Compound Mercury Ointment.	4 Mercury ointment in 10. Fusion and trituration.	Contains yellow beeswax, 24%; camphor, 12%. Avoid steel spatula.
Hydrargyri Nitratis Mercuric Nitrate Ointment. Citrine Ointment.	1 Mercury to make 15, or abt. 1 Hg(NO ₃) ₂ in 10 Chemical action. Fusion.	Contains prepared lard. Avoid steel spatula. Generally incompatible.
VII. HAVING AN ALMOND OIL BASIS.—ONE.		
Aque Rosae Rose Water Ointment. Cold Cream. Unguentum Galeni.	1 Rose water in 5, also borax, white beeswax, and oil of rose. Fusion. Incorporation.	Purified borax dissolved in rose water, before incorporation.
VIII. HAVING A LIQUID PARAFFIN BASIS.—ONE.		
Cetacei Spermaceti Ointment.	1 Spermaceti in 5. Fusion.	Contains white beeswax, 8%.
IX. HAVING A WOOL-FAT BASIS.—TWO.		
Hamamelidis Hamamelis Ointment. Witch Hazel Ointment.	1 Liq. Ext. hamamelis in 10. Incorporation.	Contains soft paraffin, 30%. Avoid steel spatula.
Lanæ Compositum Compound Wool-Fat Ointment. Emollient Ointment.	4 Wool-fat in 10. Fusion; stir until cold.	Contains prepared lard, 40%, paraffin ointment, 20%.
X. HAVING A YELLOW BEESWAX BASIS.—TWO.		
Picis Liquidæ Tar Ointment.	7 Tar in 10. Fusion.	Contains prepared lard, 5%.
Resinæ Resin Ointment. Rosin Ointment.	26 Resin in 100. Fusion, colation, stir until cold.	Contains olive oil, 26%. prepared lard, 22%.

APPENDIX.

APPENDIX

WEIGHTS

<i>Imperial grains</i>		<i>Metric milligrams</i>	<i>Imperial grains</i>		<i>Metric decigrams</i>
1/200	.	0.3	3	.	2
1/100	.	0.6	5	.	3
1/64	.	1	8	.	5
1/40	.	1.5	10	.	6
1/32	.	2	15	.	10
1/25	.	2.5	20	.	12
1/20	.	3	30	.	20
1/16	.	4	60	.	40
1/10	.	6			
1/8	.	8	<i>grains</i>		<i>grams</i>
1/5	.	12	15	.	1
1/4	.	16	30	.	2
1/2	.	30	45	.	3
			60	.	4
<i>grains</i>		<i>centigrams</i>	120	.	8
1	.	6	150	.	10
2	.	12	180	.	12
3	.	20	240	.	16
4	.	25	480	.	32
5	.	30			
8	.	50			
10	.	60			

VOLUME

<i>minims</i>		<i>centimils</i>	<i>minims</i>		<i>mils</i>
1/2	.	3	15	.	1
1	.	6	30	.	2
2	.	12	45	.	3
3	.	18	60	.	4
5	.	30	90	.	6
8	.	50			
<i>minims</i>		<i>decimils</i>	<i>fluidrachms</i>		<i>mils</i>
5	.	3	1/2	.	2
10	.	6	1	.	4
15	.	10	2	.	8
20	.	12	6	.	24
30	.	18	<i>fluidounces</i>		<i>mils</i>
60	.	36	1/2	.	15
			1	.	30
			2	.	60
			4	.	120

SYNOPSIS OF B. P. PREPARATIONS.

COMPARATIVE THERMOMETRIC SCALES.

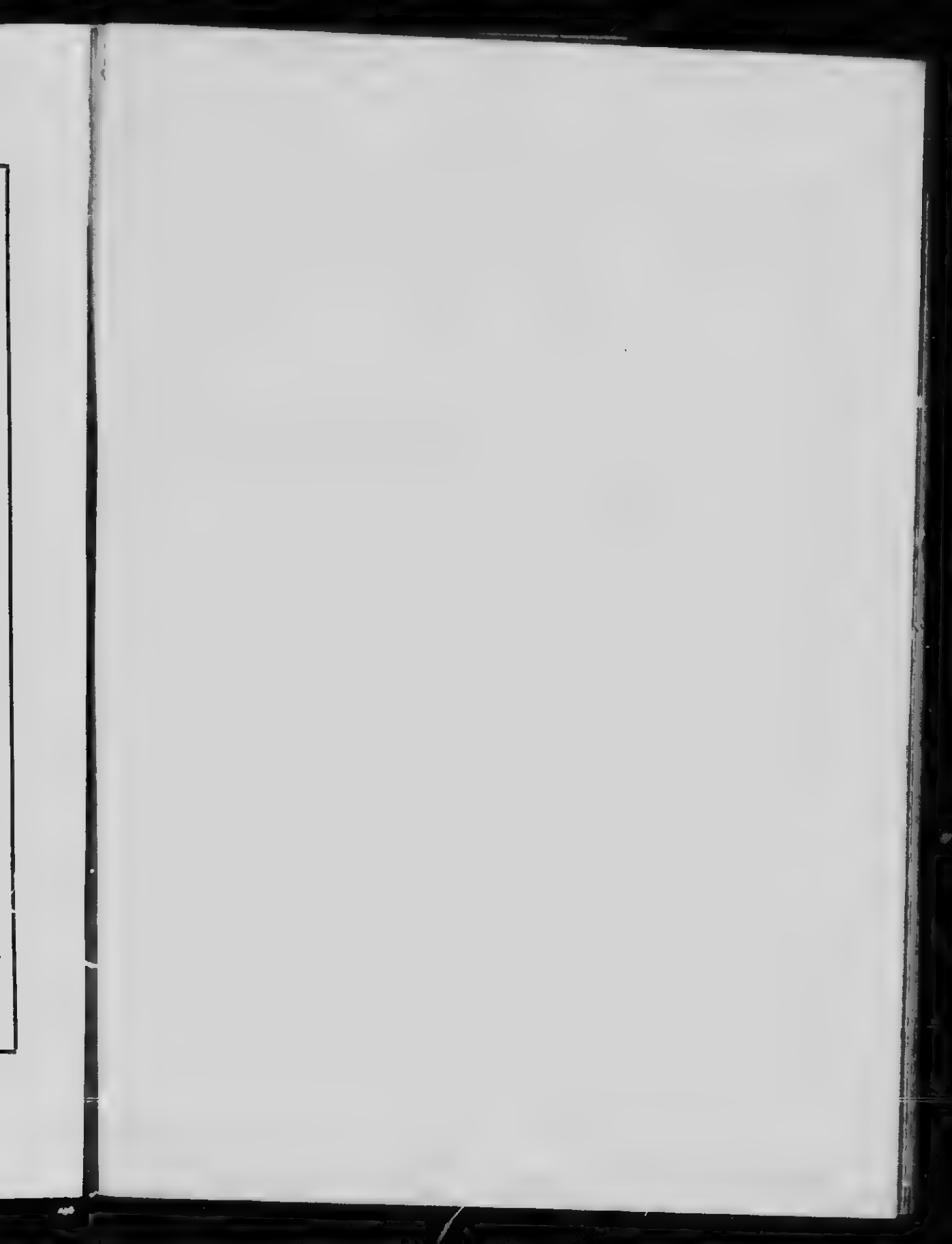
(CENTIGRADE AND FAHRENHEIT)

Degrees Centigr.		Degrees Fahren.	Degrees Centigr.		Degrees Fahren.	Degrees Centigr.		Degrees Fahren.
0	..	32	33	..	91	67	..	153
1	..	34	34	..	93	68	..	154
2	..	36	35	..	95	69	..	156
3	..	37	36	..	97	70	..	158
4	..	39	37	..	99	71	..	160
5	..	41	38	..	100	72	..	162
6	..	43	39	..	102	73	..	163
7	..	45	40	..	104	74	..	165
8	..	46	41	..	106	75	..	167
9	..	48	42	..	108	76	..	169
10	..	50	43	..	109	77	..	171
11	..	52	44	..	111	78	..	172
12	..	54	45	..	113	79	..	174
13	..	55	46	..	115	80	..	176
14	..	57	47	..	117	81	..	178
15	..	59	48	..	118	82	..	180
15.5	..	60	49	..	120	83	..	181
16	..	61	50	..	122	84	..	183
17	..	63	51	..	124	85	..	185
18	..	64	52	..	126	86	..	187
19	..	66	53	..	127	87	..	189
20	..	68	54	..	129	88	..	190
21	..	70	55	..	131	89	..	192
22	..	72	56	..	133	90	..	194
23	..	73	57	..	135	91	..	196
24	..	75	58	..	136	92	..	198
25	..	77	59	..	138	93	..	199
26	..	79	60	..	140	94	..	201
27	..	81	61	..	142	95	..	203
28	..	82	62	..	144	96	..	205
29	..	84	63	..	145	97	..	207
30	..	86	64	..	147	98	..	208
31	..	88	65	..	149	99	..	210
32	..	90	66	..	151	100	..	212

$-40^{\circ}\text{C.} = -40^{\circ}\text{F.}$ $-17.8^{\circ}\text{C.} = 0^{\circ}\text{F.}$

To transpose F. into C.: add -32 and divide by 1.8 .

To transpose C. into F.: multiply by 1.8 and add $+32$.



APPENDIX.

IMPORTANT ALTERATIONS IN STRENGTHS AND DOSES.

(APPROXIMATE STRENGTH).

TITLES.	B. P. 1898.	B. P. 1914.
ACETUM SCHILLÆ	1 in 8. Dose, 10 to 30 minims.	About 1 in 4. Dose, 5 to 15 minims.
ACETUM URGINÆ.	1 in 8. Dose, 10 to 30 minims.	About 1 in 4. Dose, 5 to 15 minims.
ACIDUM NITRICUM DILUTUM.	17.5% HNO ₃ .	10% HNO ₃ .
ACIDUM PHOSPHORICUM DILUTUM.	14% H ₃ PO ₄ .	10% H ₃ PO ₄ .
ACIDUM SULPHURICUM DILUTUM.	13.65% H ₂ SO ₄ .	10% H ₂ SO ₄ .
EMPLASTRUM BELLADONNÆ.	0.5% alkaloids.	0.25% alkaloids.
INJ. COCAINÆ HYPODERMICA.	10% cocaine hydrochlor.	5% cocaine hydrochlor.
INJ. MORPHINÆ HYPODERMICA.	Dose, 2 to 5 minims. 5% morphine tartrate.	Dose, 5 to 10 minims. 2.5% morphine tart.
LIQ. HYDRARGYRI PERCHLORIDI.	Dose, 2 to 5 minims.	Dose, 5 to 10 minims.
PILULA FERRI.	1 gr. HgCl ₂ in 2 fl. ozs.	9/10 gr. in 2 fl. ozs.
PILULA PHOSPHORI.	1 gr. FeCO ₃ in 5 grs. 2% phosphorus.	1½ gr. FeCO ₃ in 5 grains. 1% phosphorus.
SPIRITUS ÆTHERIS NITROSI.	Dose, 1 to 2 grains. 1.75 to 2% ethyl nitrite.	Dose, 1 to 4 grains. 1.5 to 2.66% ethyl nitrite.
SPIRITUS JUNIPERI.	20-40 mins. or 60-90 mins. 5% oil of juniper.	Dose, 15 to 60 minims. 10% oil of juniper.
SYRUPUS FERRI IODIDI.	Dose, 20 to 60 minims.	Dose, 5 to 20 minims.
TABELLÆ TRINITRINI.	1 gr. FeI ₃ in 11 mins.	1 gr. FeI ₃ in 16 minims.
TINCTURA ACONITI.	1 gr. C ₂ H ₅ (NO ₂) ₃ in each. 1 in 20.	5/6 gr. C ₂ H ₅ (NO ₂) ₃ in each. About 1 in 10.
TINCTURA BELLADONNÆ.	Dose, 5 to 15 minims.	Dose, 2 to 5 minims.
TINCT. CAMPHORÆ COMPOSITA.	0.05% alkaloids.	0.035% alkaloids.
TINCTURA COLCHICI.	0.046% morphine.	0.05% morphine.
TINCTURA DIGITALIS.	1 in 5.	1 in 10.
TINCTURA NUCIS VOMICÆ.	1 in 8.	1 in 10.
TINCTURA OPII.	1 gr. strychn. in fl. dr.	¾ gr. strychn. in fl. dr.
TINCTURA STROPHANTHI.	0.75% morphine.	1% morphine.
TRACHISCHUS ACIDI CARBOLICI.	1 in 40.	1 in 10.
UNGUENTUM CANTHARIDINI.	Dose, 5 to 15 minims.	Dose, 2 to 5 minims.
UNGUENTUM HYDRARGYRI.	1 gr. phenol in each.	¾ gr. phenol in each.
UNG. HYDRARGYRI AMMONIATE.	0.05% cantharidin.	0.033% cantharidin.
UNG. HYDRARGYRI COMPOSITUM.	About 50% mercury.	30% mercury.
UNG. HYDRARGYRI SUBCHLORIDI.	10% ammoniated mercury.	5% ammoniated mercury.
VINUM ANTIMONIALE.	About 20% mercury.	13% mercury.
	10% calomel.	20% calomel.
	1.75 grs. tartar emetic in each fluidounce.	2 grs. tartar emetic in each fluidounce.

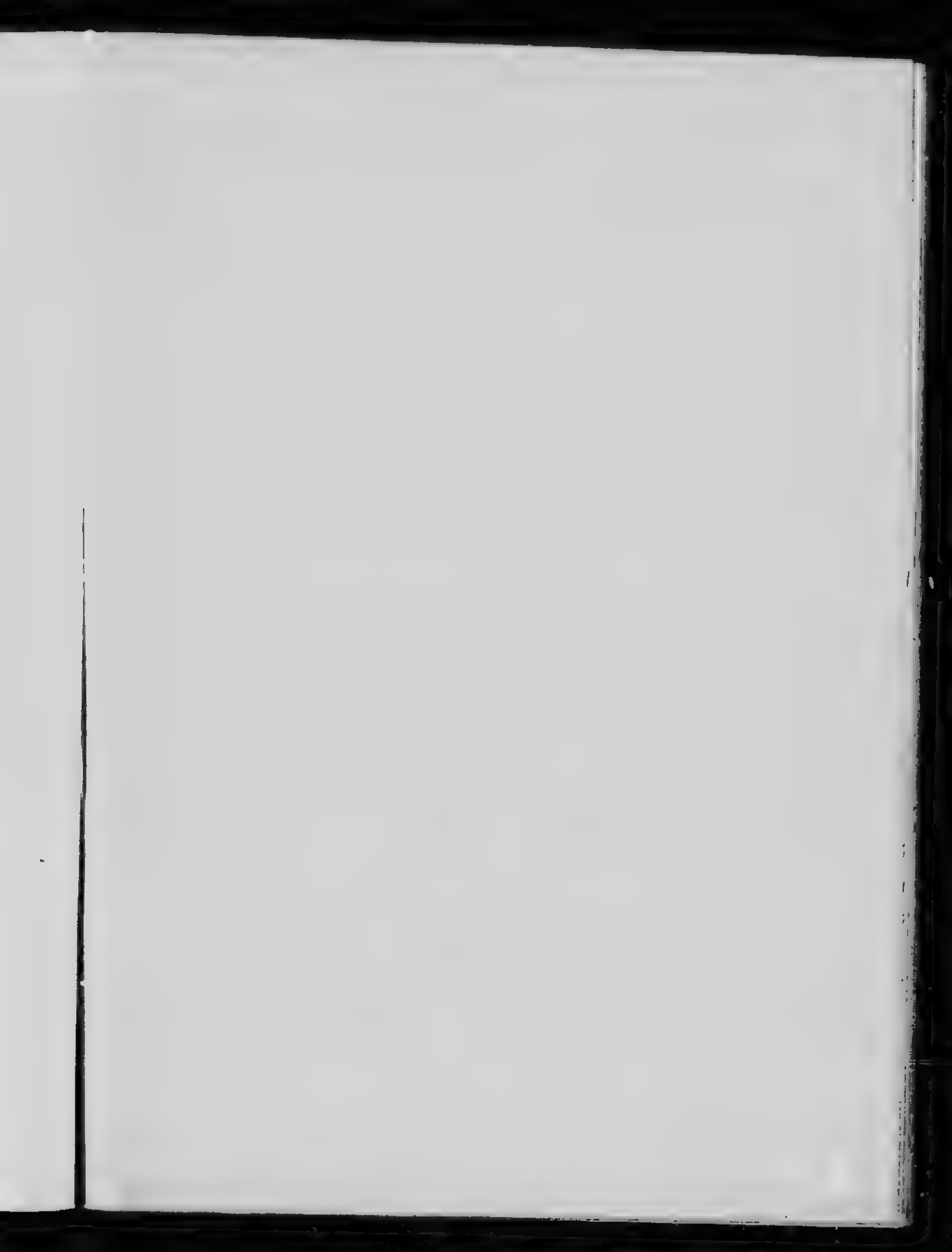
SYNOPSIS OF U. S. PREPARATIONS.

STANDARDIZATION AND ASSAY.

The following is a list of drugs and preparations, selected on account of their importance, with the standards which are required of them.

(Standardised has been abbreviated to "Stand.")

- ACID. HYDROCYAN. DIL. Stand. to 2% Hydrogen Cyanide.
 ACONITI RADIX. Assay not less than 0.4% ether-soluble Aconite alkaloids.
 AQUA LAURUCERASI. Stand. to 0.1% Hydrogen Cyanide.
 BELLADONNÆ FOLIA. Assay not less than 0.3% Belladonna alkaloids.
 BELLADONNÆ RADIX. Not assayed.
 CINCHONÆ RUHRÆ CORTEX. Assay 5 to 6% Cinchona alkaloids, not less than one-half of which is Quinine and Cinchonidine.
 EXT. BELLADONNÆ SICCUM. Stand. to 1% Belladonna root alkaloids.
 EXT. BELLADONNÆ LIQ. Stand. to 0.75% Belladonna root alkaloids.
 EXT. CINCHONÆ LIQ. Stand. to 5% Cinchona alkaloids.
 EXT. FILICIS LIQ. Assay not less than 20% Filicin.
 EXT. HYDRASTIS LIQ. Stand. to 2% Hydrastine.
 EXT. HYOSCYAMUS. Stand. to 0.3% Hyoscyamus alkaloids.
 EXT. IPECAC. LIQ. Stand. to 2% Ipecacuanha alkaloids.
 EXT. NUCIS VOMICÆ LIQ. Stand. to 1.5% Strychnine.
 EXT. NUCIS VOMICÆ SICCUM. Stand. to 5% Strychnine.
 EXT. OPII LIQUIDUM. Stand. to 0.75% Morphine.
 EXT. OPII SICCUM. Stand. to 20% Morphine.
 EXT. STROPHANTHI. Made up to double the weight of seeds used.
 FERRI ET QUININÆ CIT. Assay not less than 15% Quinine.
 IPECACUANHÆ RADIX. Stand. to 2% Ipecacuanha alkaloids.
 JALAPA. Assay, 9 to 11% Jalap resin.
 JALAPÆ RESINA. Assay. Not more than 15% to be soluble in ether.
 LINIMENTUM ACONITI. Assay, 0.2% ether-soluble Aconite alkaloids.
 LIQ. ETHYL NITRITIS. Assay, 2.5 to 3% Ethyl Nitrite.
 LIQ. FERRI PERCHLOR. FORT. Assay, 20% Iron.
 LIQ. FORMALDEHYDI. Assay, 36 to 38% Formaldehyde.
 LIQ. HYDROGENII PEROXIDI. Assay, 9 to 11 vols. available Oxygen.
 LIQ. MAGNESII BICARBONATIS. Assay, 2% Magnes. Carb.
 LIQ. PLUMBI SUBACET. FORT. Assay, 23% Lead Subacetate.
 LIQ. SODÆ CHLORINATÆ. Assay, 2.5% available Chlorine.
 NUX VOMICA. Stand. to 1.25% Strychnine.
 OPIUM. Assay not less than 7.5% Morphine when used for Tinct. of Ext.; for other official purposes, Stand. to 10% Morphine.
 POTASSII TARTRAS ACIDUS. Assay, 99% $\text{KHC}_4\text{H}_4\text{O}_6$.
 SPT. ÆTHERIS NITROSI. Assay, 1.52 to 2.66% Ethyl Nitrite.
 SPIRITUS RECTIFICATUS. Ethyl Hydroxide, 90% vol., 85.68% weight. S. G. 0.8337.
 SYR. FERRI IODIDI. Assay, 7% w/v FeI₃, or 5% by weight.
 TINCTURA ACONITI. Assay, 0.04% ether-soluble Aconite alkaloids; double the strength of B. P. 1898 preparation.
 TINCTURA BELLADONNÆ. Assay, 0.035% Belladonna leaf alkaloids; 7/10 strength B.P.'98.
 TINCTURA CAMPHORÆ CO. Assay, 0.05% Morphine; 1/10 stronger than B.P.1898.
 TINCTURA IODI FORTIS. 10% Iodine, 6% Potassium Iodide.
 TINCTURA JALAPÆ. Stand. to 1.5% Jalap Resin.
 TINCTURA NUCIS VOMICÆ. Stand. to 1/8th p.c. Strychnine; half the strength of B.P.'98.
 TINCTURA OPII. Stand. to 1% Morphine; 1/3 stronger than B.P.1898.
 TINCTURA OPII AMMONIATA. Assay, 0.1% Morphine.
 TINCTURA STROPHANTHI. 1 in 10; four times strength of B.P.1898.
 UNGUENTUM CANTHARIDINI. 0.033% Cantharidin; two-thirds strength of B.P.1898.
 UNGUENTUM HYDRARGYRI. 30% Mercury, three-fifths strength of B.P.1898.



APPENDIX.

NEW ARTICLES AND PREPARATIONS OF THE B. P. 1914.

OFFICIAL TITLES, SYNONYMS AND TRADE NAMES.

- ACETONUM.** Acetone. Dimethyl-ketone. $(CH_3)_2CO$.
ACETUM CANTHARIDINI. Vinegar of Cantharidin.
ACIDUM ACETYSALICYLICUM. Acetylsalicylic Acid. $C_6H_4 \cdot CO_2CH_3 \cdot CO_2H$. Aspirin.
 Acetosal. Acetysal. Saletin. Salacetin. Xasa.
ACIDUM HYDRIODICUM DILUTUM. Diluted Hydriodic Acid. Contains 10% HI.
ACIDUM PICRICUM. Picric Acid. $C_6H_2(NO_2)_3OH$. Trinitrophenol. Carbazotic Acid.
ADRENALINUM. Adrenalin. Suprarenin. Adneprine. Hemisine. Paraneprine. Renastypin.
BARBITONUM. Barbitone. Veronal. Malonal. Hypnogen. Malourea. Diethyl-barbituric Acid. $(C_2H_5)_2C(COHN)_2CO$.
BENZAMINÆ LACTAS. Benzamine Lactate. Eucaine Lactate.
CALCI LACTAS. Calcium Lactate. $Ca(C_2H_3O_2)_2 \cdot 5H_2O$.
CANTHARIDINUM. Cantharidin (from Cantharis or Mylabris).
CASSIÆ FRUCTUS. Cassia Pods. (Ripe fruits of *Cassia Fistula*).
CHLORAL FORMAMIDUM. Chloral Formamide. $C_2H_5Cl_2NO_2$. Chloralamide. Chloramide.
CRESOL. Cresylic Acid. $C_6H_4 \cdot CH_3 \cdot OH$. Methyl-phenol. Cresyl Hydrate.
DIAMORPHINÆ HYDROCHLORIDUM. Diamorphine, Heroin, Diacetylmorphine or Acetomorphine Hydrochloride.
EMPLASTRUM CANTHARIDINI. Cantharidin Plaster. Contains 0.2% Cantharidin.
ETHYL CHLORIDUM. Ethyl Chloride. C_2H_5Cl . (CH_3CH_2Cl) .
FERRI PHOSPHAS SACCHARATUS. Saccharated Ferrous Phosphate. Contains glucose.
GLUCOSUM. Glucose.
GUAIACOL. $C_6H_4 \cdot OH \cdot CH_3$.
GUAIACOL CARBONAS. Gualacol Carbonate. $(C_6H_4OCH_3)_2CO_2$. Duotal.
GUMMI INDICUM. Indian Gum. Ghatti Gum (like acacia).
HEXAMINA. Hexamine. Hexamethylenetetramine. $(CH_2)_6N_4$. Urotropine. Formin.
 Cystogen. Cystamine.
INJECTIO STRYCHNINÆ HYPODERMICA. Hypodermic Injection of Strychnine. 0.75%.
IPOMOEÆ RADIX. Orizaba Jalap Root. Mexican Scammony Root.
LIQUOR ADRENALINI HYDRIACIS. Hydrochloric Solution of Adrenalin.
LIQUOR CRESOL SAPONATUS. Compound Solution of Cresol. Lysol.
LIQUOR FORMALDEHYDI. Formaldehyde Solution. Formalin. 37% HCOH.
LIQ. FORMALDEHYDI SAPONATUS. Formaldehyde Solution with Soap.
METHYL SALICYLAS. Synthetic Oil of Wintergreen. $C_6H_4 \cdot OH \cdot COOCH_3$.
METHYL SULPHONAL. Trional. Diethyl-sulphone-methyl-ethyl-methane.
PELLETIERINÆ TANNAS. Pelletierine Tannate (from pomegranate bark).
PHENOLPHTHALEINUM. Phenolphthalein. Purgin. Phenolax. Laxans. Laxion. Laxen. Laxatol.
RESORCINUM. Resorcin. $C_6H_4(OH)_2$ (1:3). Resorcinol. Meta-di-hydroxy-benzene
SENNÆ FRUCTUS. Senna Pods. Senna Fruit. Dried ripe fruits of *Cassia acutifolia* and *angustifolia*.
SEVUM BENZOATUM. Benzoated Suet.
SODII PHOSPHAS ACIDUS. Acid Sodium Phosphate. $NaH_2PO_4 \cdot H_2O$. Sodium Biphosphate.
STRONTII BROMIDUM. Strontium Bromide. $SrBr_2 \cdot 6H_2O$.
SYRUPUS ACIDI HYDRIODICI. Contains 1% HI.
THEOBROMINÆ ET SODII SALICYLAS. Thebromine and Sodium Salicylate. Diuretin.
TINCTURA CANTHARIDINI. Tinct. of Cantharidin (has replaced Tinct. Cantharidis, 1898).
UNGUENTUM CANTHARIDINI. Cantharidin Ointment (has replaced Ung. Cantharidis, 1898).
UNGUENTUM LANÆ COMPOSITUM. Compound Wool Fat Ointment. Emollient Ointment.
UNGUENTUM PLUMBI SUBACETATIS. Lead Subacetate Ointment.
ZINCI OLEOSTEARAS. Zinc Oleostearate.

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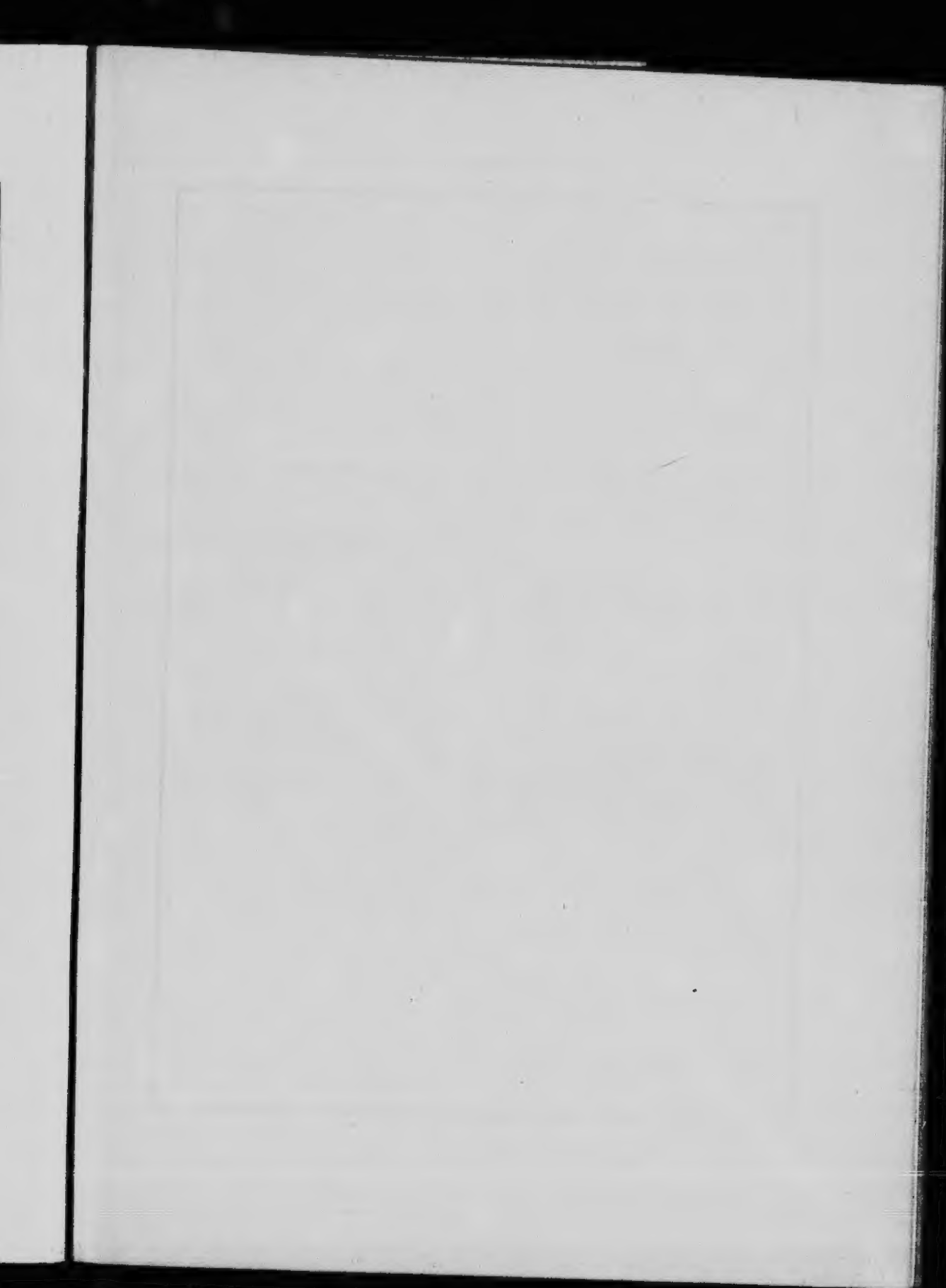
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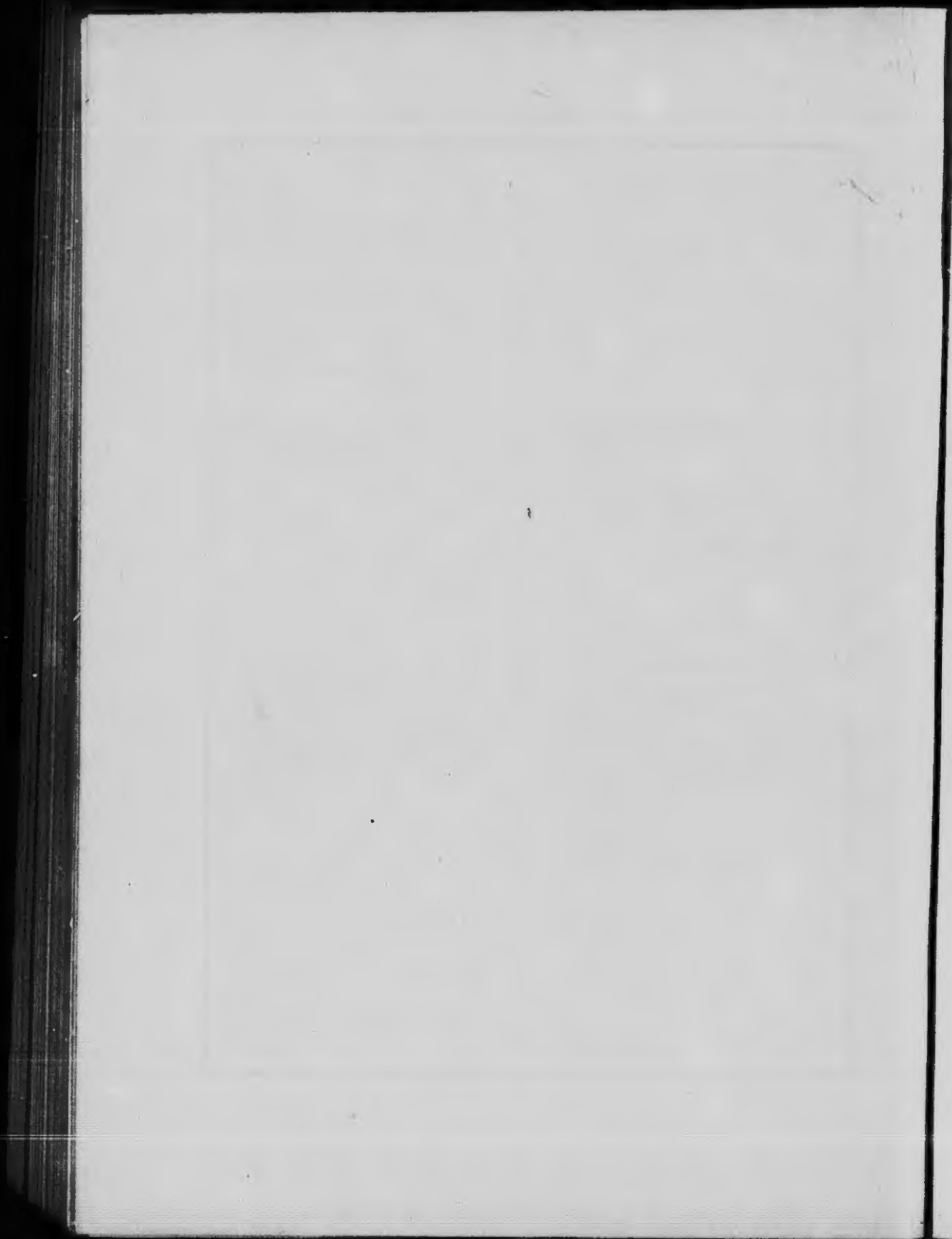
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